

# Level 5 Review Summer Packet

(Answer key)

1) Which of the following fractions is the smallest and the largest?

$\frac{3}{5}$	$\frac{1}{2}$	$\frac{6}{9}$	$\frac{5}{4}$	0
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Smallest	Largest
0	$\frac{5}{4}$

Find the value of

$$3^4 = 3 \times 3 \times 3 \times 3 = 81$$

$$4^3 = 4 \times 4 \times 4 = 64$$

$$10^4 = 10 \times 10 \times 10 \times 10 = 10000$$

2) How much do I pay for a 5 minute phone call that costs \$ 1.25 for the first minute and 60 cents for each additional minute?

$$\begin{aligned} & (1 \text{ min}) + (4 \text{ min}) \\ & = \$1.25 + 4 \times \$0.60 \\ & = \$1.25 \\ & + \$2.40 \end{aligned}$$

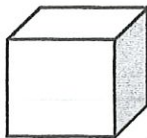
\$ 3.65
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Give two equivalent fractions for

Given fraction	equivalent	equivalent
$\frac{3}{7}$	$\frac{6}{14}$	$\frac{9}{21}$
$\frac{1}{4}$	$\frac{2}{8}$	$\frac{20}{80}$
$-\frac{3}{2}$	$-\frac{6}{4}$	$-\frac{9}{6}$

3) Each side of a metal cube is 4 m. What is the volume of the cube?

$$\begin{aligned} \text{Volume} &= L \times W \times H \\ &= 4 \times 4 \times 4 \end{aligned}$$



$64 \text{ m}^3$
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In a school year of 200 days total, the teacher was absent for 8% of the days. How many days was the teacher present at school? ( Hint: Round off your answer to the nearest whole number)

Total days	Present days
200	x
100	92

184 days
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$$\begin{aligned} x &= \frac{200 \times 92}{100} \\ &= 2 \times 92 \end{aligned}$$

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4)

Match the following for different kinds of angles

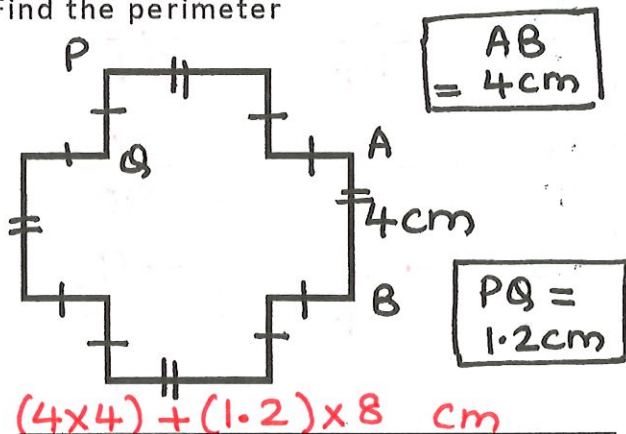
Acute	180 degrees
Right	Between 90 degrees and 180 degrees
Reflex	More than 180 degrees
Straight	Less than 90 degrees
Obtuse	90 degrees

Find the complement and the supplement of the following angles

Given angle	Complement (Sum = $90^\circ$ )	Supplement Sum = $180^\circ$
$23^\circ$	$(90 - 23) = 67^\circ$	$(180 - 23) = 157^\circ$
$49^\circ$	$41^\circ$	$131^\circ$
$20^\circ$	$70^\circ$	$160^\circ$

5)

Find the perimeter



$$(4 \times 4) + (1.2) \times 8 \text{ cm}$$

$$25.6 \text{ cm}$$

The cost of 15 bags is \$42. What is the cost of 60 bags?

bags	Cost
15 bags	\$ 42
60 bags	x
$15 \times 4 = 60$	$42 \times 4 = \$168$

$$\$ 168$$

6)

The absolute value of  $-4$  is 4

The absolute value of  $3$  is 3

The Opposite of  $(-8)$  is 8

The reciprocal of  $\frac{9}{10}$  is  $(\frac{10}{9})$

The absolute value of  $\frac{-3}{9}$  is  $(\frac{3}{9})$

The absolute value of  $9$  is 9

The Opposite of  $(\frac{-7}{6})$  is  $(\frac{7}{6})$

The reciprocal of  $\frac{7}{8}$  is  $(\frac{8}{7})$

Pg (2)



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7)

Prime factorize

300

÷	300
2	150
2	75
5	15
5	3
3	1

$$300 = 2 \times 2 \times 3 \times 5 \times 5$$

Prime factorize

243

÷	243
3	81
3	27
3	9
3	3
3	1

$$243 = 3 \times 3 \times 3 \times 3 \times 3$$

8)

Find the perimeter of a regular Hexagon whose each side is 5.06 cm

Perimeter (Hexagon)

$$= 5.06 \times 6$$

$$\underline{\quad \quad \quad}$$

$$30.36$$

$$30.36 \text{ cm}$$

A square field has a side of 1.08 meters. A girl runs around it 4 times. How much distance does she cover?

$$1.08 \times 4 = 4.32$$

$$4.32 \times 4 = 17.28 \text{ m}$$

$$17.28 \text{ m}$$

9)

A motor car covers a distance of 58 miles in 4 gallons of gas. What distance will it cover in 10 gallons of gas?

Distance	58	29
gas	4	2

$$\frac{29}{4} \times 5 = 145 \text{ miles}$$

$$2 \times 5 = 10 \text{ gallons}$$

$$145 \text{ miles}$$

Find x

$$4x - 7 = -9$$

$$\underline{\quad +7 \quad +7}$$

$$\frac{4x}{4} = \frac{-2}{4}$$

$$x = -\frac{1}{2}$$

$$x = -\frac{1}{2}$$

10)

$$\begin{array}{r}
 1.59333\dots \\
 3 \overline{) 4.78000} \\
 \underline{-3} \phantom{000} \\
 17 \phantom{00} \\
 \underline{-15} \phantom{0} \\
 28 \phantom{0} \\
 \underline{-27} \phantom{0} \\
 10 \phantom{0} \\
 \underline{-9} \phantom{0} \\
 10 \phantom{0} \\
 \underline{-9} \phantom{0} \\
 10
 \end{array}$$

$Q = 1.59\overline{3}$

$$\begin{array}{r}
 6.090909\dots \\
 11 \overline{) 67.000} \\
 \underline{-66} \phantom{00} \downarrow \\
 10 \phantom{00} \\
 \underline{-0} \phantom{00} \\
 100 \phantom{0} \\
 \underline{-99} \phantom{0} \\
 10 \phantom{0} \\
 \underline{-0} \phantom{0} \\
 100 \phantom{0} \\
 \underline{-99} \phantom{0} \\
 1
 \end{array}$$

$Q = 6.0\overline{9}$

11)

a) How many integers lie between -8 and -15? 6 Numbers  
 $15 - 8 = 7 - 1 = 6$

b) How many integers lie between -4 and 8? 11 Numbers  
 $-4 \quad 0 \quad 8 \quad 7 + 3 + 1$

c) How many integers lie between 2 and -8? 9 Numbers  
 $1 + 1 + 7$

12)

A play ground has a length of 35 feet and a width of 20 feet. What is the area of the playground?

$$\begin{aligned}
 \text{Area} &= L \times W \\
 &= 35 \times 20 \\
 &= 700 \text{ ft}^2
 \end{aligned}$$

$700 \text{ sq feet}$

Express as regular numbers

XIII	13
LXXXVI	86
CLXV	165
CCIX	209
XCIII	93
CXX	120



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13) Find the value of

a	Sum of all counting numbers from 1 to 10	55
b	Sum of all counting numbers from 11 to 20	155
c	Sum of all counting numbers from 21 to 30	255
d	Sum of all counting numbers from 31 to 40	355

14) Find the value of

a	Sum of all counting numbers from 0-9	45
b	Sum of all counting numbers from 10-19	145
c	Sum of all counting numbers from 20-29	245
d	Sum of all counting numbers from 30-39	345

- 15) State True or false
- a) One is the smallest integer. False
  - b) The sum of two positive numbers is negative. False
  - c) The product of two positive numbers is positive. True
  - d) -4 and 4 are at the same distance from Zero on the number line. True
  - e) All Whole numbers are integers. True
  - f) All integers are natural numbers. False
  - g) The square of 81 is 9. False
  - h)  $3^6 = 3 * 3 * 3 * 3 * 3 * 3$  True
  - i) The measure of each angle of triangle is 60 degrees. False
  - j) If two figures have the same shape then they are said to be congruent. False

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16)

What is the probability of

a) Picking a red sock from a drawer containing 7 blue, 8 red and 4 yellow socks <i>Total = 19</i>	$\frac{8}{19}$
b) Not picking a red sock from a drawer containing 6 blue, 11 red and 8 yellow socks <i>6 Blue + 8 yellow</i>	$\frac{14}{25}$
c) Not picking a blue sock from a drawer containing 5 blue, 7 red and 5 yellow socks <i>7 Red + 5 yellow</i>	$\frac{12}{17}$
d) Rolling a prime number on a dice numbered 1-15 <i>2, 3, 5, 7, 11, 13</i>	$\frac{6}{15}$
e) Rolling a number greater than 10 on a dice numbered 1-15	$\frac{5}{15} = \frac{1}{3}$

17)

Solve the following decimals

$\begin{array}{r} 4.38 \\ \times 0.02 \\ \hline 876 \\ \hline 0.0876 \end{array}$	$\begin{array}{r} 4.38 \\ - 1.972 \\ \hline 2.408 \end{array}$	$\begin{array}{r} 3.03 \\ \times 0.6 \\ \hline 1818 \\ \hline 1.818 \end{array}$
-----------------------------------------------------------------------------------	----------------------------------------------------------------	----------------------------------------------------------------------------------

Collect the like terms into the given boxes

18)  $4x^2, 3xy, -3xy^2, (\frac{4}{3})xy, -9y^2x, 6x^2$

a)

$4x^2$	$3xy$	$-3xy^2$		
$6x^2$	$\frac{4}{3}xy$	$-9y^2x$	-	-

b)

$-4x, 3y, 9y, (\frac{8}{7})x, (\frac{8}{7})x^2, -5y, -5y^2$

$-4x$	$3y$	$(\frac{8}{7})x^2$		
$\frac{8}{7}x$	$9y$		$-5y^2$	-
	$-5y$			



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19) find the Greatest common factor for

<u>40, 70, 55</u>		<u>96, 36, 60</u>	
÷	40, 70, 55	÷	96, 36, 60
5	8, 14, 11	6	16, 6, 10
		2	8, 3, 5
GCF =	5	GCF =	12

20) (Take  $\pi = 3.14$ ) (Use calculator)

R	5 cm	
D	10 cm	
$C = \pi d$	$3.14 \times 10$	= 31.4 cm
$A = \pi R^2$	$3.14 \times 5 \times 5$	= 78.5 cm <sup>2</sup>

21) (Take  $\pi = 3.14$ ) Use calculator

R	8 cm	
D	16 cm	
$C = \pi d$	$3.14 \times 16$	= 50.24 cm
$A = \pi R^2$	$3.14 \times 8 \times 8$	= 200.96 cm <sup>2</sup>

Find the value of

22) a)	$0.05 * 250 =$	12.50	$0.05 * 25 =$	1.25
b)	$700 \div 1000 =$	0.7	$70 \div 1000 =$	0.07
c)	$1.020 * 200 =$	204	$1.020 * 2 =$	2.04

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23) A man walks 0.08 meters with each step. How many steps will be required to walk a distance of 70 meters?

$$0.08 \overline{) 70}$$

$$= 8 \overline{) 7000}$$

$$\begin{array}{r} 875 \\ 8 \overline{) 7000} \\ \underline{- 7000} \\ 0 \end{array}$$

875 steps

24) Fraction operations

C1

$$3\frac{1}{5} * \frac{2}{3}$$

$$= \frac{16}{5} * \frac{2}{3}$$

$$= \frac{16 \times 2}{5 \times 3}$$

$$= \frac{32}{15}$$

$2\frac{2}{15}$

C2

$$3\frac{1}{5} + \frac{2}{3}$$

$$= 3 + \frac{1}{5} + \frac{2}{3}$$

$$= 3 + \frac{3}{15} + \frac{10}{15}$$

$$= 3 + \frac{13}{15}$$

$3\frac{13}{15}$

C3

$$3\frac{1}{5} - \frac{2}{3}$$

$$= 3 + \frac{1}{5} - \frac{2}{3}$$

$$= 3 + \frac{3}{15} - \frac{10}{15}$$

$$= 3 - \frac{7}{15}$$

$2\frac{8}{15}$

25)

$$\frac{-4}{9} * \frac{15}{2}$$

$$= \frac{-2 \times \cancel{2} \times 3 \times 5}{3 \times 3 \times \cancel{2}}$$

$$= \frac{-10}{3}$$

$-3\frac{1}{3}$

$$\frac{-4}{5} - \frac{15}{2}$$

$$= \frac{-4(2)}{10} - \frac{15(5)}{10}$$

$$= \frac{-8}{10} - \frac{75}{10}$$

$$= \frac{-83}{10}$$

$-8\frac{3}{10}$

$$\frac{-4}{3} \times \frac{5}{2}$$

$$= \frac{-2 \times \cancel{2} \times 5}{3 \times \cancel{2}}$$

$$= \frac{-10}{3}$$

$-3\frac{1}{3}$

26) Find the area of a triangle whose base is 12cm and the height is 3.6 cm.

$$\text{Area}(\Delta) = \frac{b \times h}{2}$$

$$= \frac{12 \times 3.6}{2}$$

$$\text{Area}(\Delta) = 6 \times 3.6$$

21.6 sq, cm



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27) Find the area of a triangle whose base is 12cm and the height is one and quarter times the length of the base.

base = 12 cm

Height =  $(1\frac{1}{4}) \times 12$   
 $= \frac{5}{4} \times 12 = 15$

Area( $\Delta$ ) =  $\frac{b \times h}{2}$   
 $= \frac{15 \times 12}{2}$   
 $= 15 \times 6$

90 cm<sup>2</sup>

28) find the Least common Multiple for

20, 30, 40	15, 35, 7																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">÷</td><td style="text-align: center;">20</td><td style="text-align: center;">30</td><td style="text-align: center;">40</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td></tr> <tr><td style="text-align: center;">2</td><td style="text-align: center;">1</td><td style="text-align: center;">3</td><td style="text-align: center;">2</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">1</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td style="text-align: center;">2</td><td style="text-align: center;">1</td><td style="text-align: center;">1</td><td style="text-align: center;">1</td></tr> </table>	÷	20	30	40	10	2	3	4	2	1	3	2	3	1	1	2	2	1	1	1	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="text-align: center;">÷</td><td style="text-align: center;">15</td><td style="text-align: center;">35</td><td style="text-align: center;">7</td></tr> <tr><td style="text-align: center;">7</td><td style="text-align: center;">15</td><td style="text-align: center;">5</td><td style="text-align: center;">1</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">3</td><td style="text-align: center;">1</td><td style="text-align: center;">1</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">1</td><td style="text-align: center;">1</td><td style="text-align: center;">1</td></tr> </table>	÷	15	35	7	7	15	5	1	5	3	1	1	3	1	1	1
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3	1	1	2																																		
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÷	15	35	7																																		
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LCM = $10 \times 2 \times 3 \times 2 = $ <span style="border: 1px solid black; padding: 2px;">120</span>	LCM = $7 \times 5 \times 3 = $ <span style="border: 1px solid black; padding: 2px;">105</span>																																				

29) find the Least common Multiple for

26, 65, 130	51, 17, 6																																
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2	1	1	1																														
÷	17	51	6																														
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3	1	1	2																														
2	1	1	1																														
LCM = $13 \times 5 \times 2 = $ <span style="border: 1px solid black; padding: 2px;">130</span>	LCM = $17 \times 3 \times 2 = $ <span style="border: 1px solid black; padding: 2px;">102</span>																																

# Level 5 Review Summer Packet

30)

Convert into improper fractions

$$8\frac{3}{7}$$

$$= \frac{8 \times 7 + 3}{7}$$

$$= \frac{56 + 3}{7}$$

$$\boxed{\frac{59}{7}}$$

$$6\frac{2}{5}$$

$$= \frac{6 \times 5 + 2}{5}$$

$$= \frac{32}{5}$$

$$\boxed{\frac{32}{5}}$$

$$1\frac{2}{13}$$

$$= \frac{13 + 2}{13}$$

$$\boxed{\frac{15}{13}}$$

31)

Convert into mixed fractions

$$\frac{41}{7}$$

$$\begin{array}{r} 5 \\ 7 \overline{)41} \\ \underline{-35} \\ 6 \end{array}$$

$$\boxed{5\frac{6}{7}}$$

$$\frac{29}{3}$$

$$\begin{array}{r} 9 \\ 3 \overline{)29} \\ \underline{-27} \\ 2 \end{array}$$

$$\boxed{9\frac{2}{3}}$$

$$\frac{91}{6}$$

$$\begin{array}{r} 15 \\ 6 \overline{)91} \\ \underline{-6} \\ 31 \\ \underline{-30} \\ 1 \end{array}$$

$$\boxed{15\frac{1}{6}}$$

32)

Fraction operations

$$3\frac{1}{3} + 2\frac{1}{2}$$

$$= 3 + 2 + \frac{1}{3} + \frac{1}{2}$$

$$= 5 + \frac{2}{6} + \frac{3}{6}$$

$$= 5 + \frac{5}{6}$$

$$\boxed{5\frac{5}{6}}$$

$$(5\frac{1}{9}) \times \frac{9}{23}$$

$$= \frac{46}{9} \times \frac{9}{23}$$

$$= \frac{\cancel{23} \times 2 \times \cancel{9}}{\cancel{23} \times \cancel{9}}$$

$$\boxed{2}$$

$$3\frac{1}{3} - 2\frac{1}{2}$$

$$= (3 - 2) + (\frac{1}{3} - \frac{1}{2})$$

$$= 1 + \frac{2}{6} - \frac{3}{6}$$

$$= 1 - \frac{1}{6}$$

$$\boxed{\frac{5}{6}}$$



# Level 5 Review Summer Packet

33) Integer operations

	C1	C2	C3
a	$-2 * -7$ 14	$-11 + 7$ -4	$-10 * -7$ 70
b	$(-20) + (-9)$ -29	$-13 + (-9)$ -22	$-3 * (15)$ -45
c	$(-7) * (-10)$ 70	$-5 * (8)$ -40	$-4 * (-9)$ 36
d	$-7 * (-5)$ 35	$9 + (-10)$ -1	$-4 * (-7)$ 28
e	$(-4) + (-6)$ -10	$-3 * (0)$ 0	$-10 * (7)$ -70
f	$-(-3) * (-5)$ -15	$-5 * (-3)$ 15	$-8 * (-9)$ 72

34) At a railway booking office tickets numbering from 1,999 to 2,500 were sold today. How many tickets were sold today?

$$\begin{array}{r} 2500 \\ - 1999 \\ \hline 501 + 1 \end{array}$$

502 tickets

35) At a railway booking office tickets numbering between 1,945 and 3000 were sold today. How many tickets were sold today?

$$\begin{array}{r} 3000 \\ - 1945 \\ \hline 1055 - 1 \end{array}$$

1054 tickets

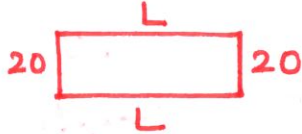
36) What is the sum of

	C1	C2
a)	Even numbers from 100 to 110 Sum(even #s from 100 to 110) $= 100 + 102 + 104$ $+ 106 + 108 + 110 =$ <span style="border: 1px solid black; padding: 2px;">630</span>	Odd number from 30 and 40 $= 31 + 33 + 35 + 37 + 39$ $= (30 \times 5) + 1 + 3 + 5 + 7 + 9$ $= 150 + 25$ <span style="border: 1px solid black; padding: 2px;">175</span>
b)	Prime numbers between 30 and 50 $31 + 37 + 41 + 43 + 47$ $= 60 + 120 + 8 + 11$ $= 180 + 19$ <span style="border: 1px solid black; padding: 2px;">199</span>	even numbers between 300 and 310 $= 302 + 304 + 306 + 308$ $= 300 \times 4 + (2 + 4 + 6 + 8)$ $= 1200 + 20$ <span style="border: 1px solid black; padding: 2px;">1,220</span>

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37)

The perimeter of a rectangle is 96 meters. Find the length of the rectangle if the width is 20 meters



$$L + L + 20 + 20 = 96$$

$$2L + 40 = 96$$

$$2L = 56$$

$$L = 28$$

$$L = 28 \text{ m}$$

Length = 28 m

38)

In an examination the passing score is 40%. How many points will be a passing score in the total score of 500 points

Total	Passing
100	40
500	x

$$40 \times 5 = 200$$

Passing Score

200 points

39)

Three fifth of a number is 90. Find the number

$$\frac{90 \times 5}{3} = 30 \times 5$$

150 points

Randy drank  $\frac{3}{5}$ th of the juice from a bottle. If he drank 150 ml of juice. How much juice is left in the bottle now?

$$\frac{150 \times 5}{3} = 50 \times 5 = 250 \text{ ml}$$

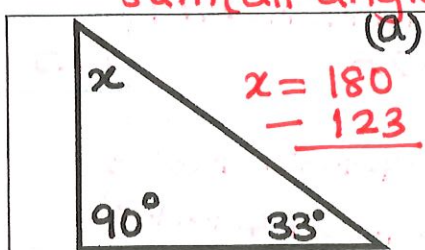
Juice left

100 ml

40)

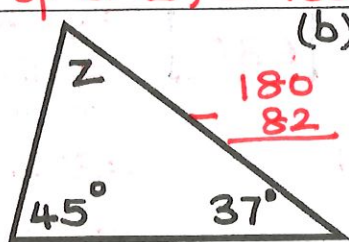
Find the measure of the third angle in the given triangles

$$\text{Sum}(\text{all angles of a } \Delta) = 180^\circ$$



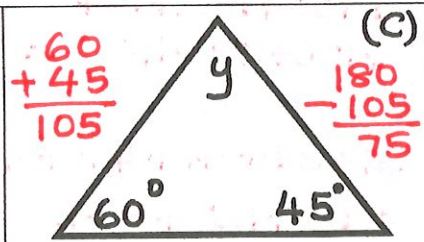
$$\begin{array}{r} x = 180 \\ - 123 \\ \hline \end{array}$$

$$x = 57^\circ$$



$$\begin{array}{r} 180 \\ - 82 \\ \hline \end{array}$$

$$z = 98^\circ$$



$$\begin{array}{r} 180 \\ - 105 \\ \hline 75 \end{array}$$

$$y = 75^\circ$$



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46) The sum of two consecutive numbers is 123. What are the two numbers?

$$\square + \square = 123 \quad \begin{array}{r} 2 \overline{)123} \\ \underline{-122} \\ 1 \end{array}$$

61 and 62

47) The sum of two consecutive even numbers is 294. What are the two numbers?

$$\begin{array}{r} 147 \\ 2 \overline{)294} \\ \underline{-294} \\ 0 \end{array}$$

146 and 148

48) The sum of two consecutive odd numbers is 312. What are the two numbers?

$$\begin{array}{r} 156 \\ 2 \overline{)312} \\ \underline{-312} \\ 0 \end{array}$$

155 and 157

49) The sum of three consecutive odd numbers is 231. What are the numbers?

$$\begin{array}{r} 77 \\ 3 \overline{)231} \\ \underline{-21} \\ 21 \\ \underline{-21} \\ 0 \end{array}$$

75, 77 and 79

50) When I multiply a certain number by 3, and then divide that product by 4, I get 45. What is the number?

$$\frac{\# \times 3}{4} = 45 \quad \left| \quad \begin{array}{l} \# \times 3 = 180 \\ \frac{180}{3} \\ \# = 60 \end{array} \right.$$

60

51) When I divide a certain number by 5, the quotient is 99 and the remainder is 3. What is the number?

$$\begin{aligned} Dd &= Dv \times Q + R \\ Dd &= 99 \times 5 + 3 \\ &= 495 + 3 \end{aligned}$$

498

52) Two numbers add up to 485 and differ by 245. What is the larger of the two numbers?

$$\begin{array}{l} n_1 + n_2 = 485 \\ n_1 - n_2 = 245 \end{array} \quad \left| \quad \begin{array}{l} (485 + 245) \div 2 \\ = 730 \div 2 \\ = 365 \end{array} \right.$$

Larger #  
365

# Level 5 Review Summer Packet

41) (Take  $\pi = 3.14$ )

R	6 cm
D	12 cm
$C = \pi d$	$3.14 \times 12 = 37.68 \text{ cm}$
$A = \pi R^2$	$3.14 \times 6 \times 6 = 113.04 \text{ cm}^2$

42) Sandy types 400 words in 9 minutes. How many words will she type in 2 hours 15 minutes?

Time (min)	words
9 min	400
135 min	x

$2 \text{ Hours } 15 \text{ min} = 135 \text{ min}$   
 $9 \times \square = 135$   
 $\square = 15$

$400 \times 15 = 6000$

**6,000 words**

43) What the area of a triangle whose base is 70 cm and height is three times the base?

base = 70 cm  
 Height = 210 cm

$\text{Area} (\Delta) = \frac{b \times h}{2} = \frac{70 \times 210}{2} = \frac{14700}{2} = 7350 \text{ sq, cm}$

**7350 sq, cm**

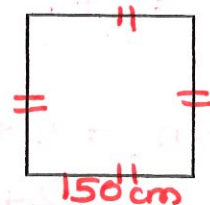
44) A tennis ball is dropped from a height of 120 feet. Each time it bounces, it returns to half the height. What is the maximum height in feet it will reach after its fourth bounce?

Bounce	height (Reached)
1 <sup>st</sup> bounce	60 feet
2 <sup>nd</sup> bounce	30 feet
3 <sup>rd</sup> bounce	15 feet
4 <sup>th</sup> bounce	7.5 feet

**7.5 feet**

45) What is the area of a square whose perimeter is 600 cm?

Perimeter = 600 cm  
 Side (Sq) = 150 cm  
 Area (sq) =  $150 \times 150 = 22500 \text{ cm}^2$



**22,500 cm<sup>2</sup>**



# Level 5 Review Summer Packet

53) If three months ago was December, what month will it be 20 months from now?

3 months ago = December | 23 months from now  
 Total # of months =  $3 + 20 = 23$  | will be December - 1

November

54) How many numbers between 100 and 150 are divisible by 3 and 5?

divisible by 3 and 5  
 = divisible by 15  
 $105 \div 15 = 7$

3 numbers

105 120 135

55) A farm has chickens and dogs. In all there are 28 legs and 11 heads on the farm. How many chicken and dogs.

	chicken	dogs	
heads	1C	1D	$C + D = 11 \Rightarrow 2C + 2D = 22$
Legs	2C	4D	$2C + 4D = 28$ $22 + 2D = 28$ $2D = 6$

$D = 3$   
 $C = 8$

3 dogs | 8 chicken

56) Amy woke up at 9:40 A.M. If she went to lunch 185 minutes later, what time did she go to lunch?

185 minutes = 3 Hours 5min  
 9:40 am + 3 Hours 5min = 12:45 pm

12:45 pm

57) Draw stem leaf plot for  
 72, 85, 67, 63, 70, 74, 81, 80, 65, 71, 74, 78, 83, 85, 61, 67, 69

Stem	Leaves
6	1, 3, 5, 7, 7, 9
7	0, 1, 2, 4, 4, 8
8	0, 1, 3, 5, 5

# Level 5 Review Summer Packet

58) find the GCF and LCM of (leave in product form if necessary)

$30, 26, 13$ <hr/> <table border="1"> <tr><td>÷</td><td>30, 26, 13</td></tr> <tr><td>13</td><td>30, 2, 1</td></tr> <tr><td>2</td><td>15, 1, 1</td></tr> <tr><td>15</td><td>1, 1, 1</td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	÷	30, 26, 13	13	30, 2, 1	2	15, 1, 1	15	1, 1, 1							$24, 16, 40$ <hr/> <table border="1"> <tr><td>÷</td><td>24, 16, 40</td></tr> <tr><td>4</td><td>6, 4, 10</td></tr> <tr><td>2</td><td>3, 2, 5</td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	÷	24, 16, 40	4	6, 4, 10	2	3, 2, 5						
÷	30, 26, 13																										
13	30, 2, 1																										
2	15, 1, 1																										
15	1, 1, 1																										
÷	24, 16, 40																										
4	6, 4, 10																										
2	3, 2, 5																										
GCF = 1	GCF = 8																										
LCM = $13 \times 2 \times 15 = 390$	LCM = $8 \times 3 \times 2 \times 5 = 240$																										

59) A party starts at 8:00 p.m. with ten people at the party. If every 15 minutes, three new people come to the party and nobody leaves, how many people are at the party at 10:30 p.m.?

Time	People
8:00pm	10
9:00p	$10 + 3 \times 4 = 22$
10:00pm	$22 + 3 \times 4 = 34$
10:30pm	$34 + 3 \times 2 = 40$

40 people

60) Find

Square of -11	Square of (0.02)	Cube of -3	Cube of 0.2
$-11 \times -11$	$0.02 \times 0.02$	$-3 \times -3 \times -3$	$0.2 \times 0.2 \times 0.2$
121	0.0004	-27	0.008

61) Parking fees in Seattle are calculated on a weighted value. The first hour is weighted at 5 times the cost of each of the other hours following. What is the charge, in dollars, for 6 hours of parking if the second hour cost \$1?

6 Hours  
 = 1<sup>st</sup> Hour + 5 extra Hours  
 = \$5 + 5 × 1 \$ = \$5 + \$5

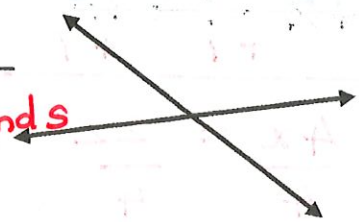
\$ 10



# Level 5 Review Summer Packet

62) Fill in the blanks

- a) What is the probability of drawing hearts from a deck of cards?  $\frac{13}{52}$  or  $\frac{1}{4}$
- b) What is the smallest prime number more than 70? 71
- c) The cube of  $(-5)$  is  $-125$   
 $(-5)(-5)(-5) = -125$
- d) The smallest whole number is 0
- e) The sum of all angles of a rhombus is  $360^\circ$
- f) How many seconds make 2 hours? 7200 seconds
- g) The roman numeral for 49 is XLIX
- h) 32 quarts makes 8 gallons  
 $2 \times 60 \times 60 = 7200$
- i) If the measure of an angle is  $110^\circ$ , its vertical opposite angle =  $110^\circ$
- j) Sum of all counting numbers from 40 to 49 is 445
- k) Sum of all counting numbers from 31 to 40 is 355



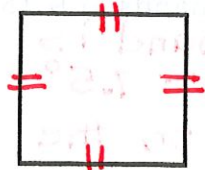
63) The sum of four consecutive numbers is 818. What is the smallest of these four numbers?

$$\begin{array}{r} 204 \\ 4 \overline{)818} \\ \underline{-8} \\ 018 \\ \underline{-16} \\ 2 \end{array}$$

The 4 numbers are  
 203, 204, 205  
 and 206

Smallest #  
203

64) What is the cost of a bordering a square frame with each side 7.06 feet at the rate of 2 dollars per feet?



Perimeter (Square)  
 $= 7.06 \times 4$   
28.24 feet

Cost =  $28.24 \times 2$   
 $\$ 56.48$

\$ 56.48

65) What time is it 244 minutes before 7:18 pm?

$$\begin{array}{r} 4 \\ 60 \overline{)244} \\ \underline{-240} \\ 4 \end{array}$$

4 Hours 4 minutes  
 before 7:18 pm

3:14 pm

# Level 5 Review Summer Packet

66) What is the cost of a painting a square box with each side 7.06 feet at the rate of 2 dollars per square feet?  $\text{Area (sq)} = (7.06)^2$  | Cost =

$$\begin{array}{r} 706 \\ \times 706 \\ \hline 4233 \\ 0000 \\ 498433 \end{array}$$

$= 49.8433$

$\$ 99.70$

67) Find x

$$4x - 7 = 15$$

+7      +7 (Adding 7)

$$\frac{4x}{4} = \frac{22}{4}$$

(Dividing by 4)

$$2x = 11$$

$$x = 5.5$$

$x = 5.5$  or  $11/2$

Find x

$$\frac{2}{3}x = 7$$

$$\frac{3}{2} \left( \frac{2}{3}x \right) = \frac{3}{2} \times 7$$

$$x = \frac{21}{2}$$

$x = \frac{21}{2}$  or 10.5

68) Find x

$$2x + 7 = 9$$

-7      -7 (Subtracting 7)

$$\frac{2x}{2} = \frac{2}{2}$$

$$x = 1$$

$x = 1$

Find x

$$\frac{5}{3}x = -10$$

Multiplying by  $\frac{3}{5}$

$$\frac{3}{5} \left( \frac{5}{3}x \right) = \frac{3}{5}(-10)$$

$$x = -6$$

$x = -6$

69) A snail is in a well 45 feet deep. Each day the snail crawls 10 feet up the side of the well. Each night while it sleeps, it slides down the side of the well 3 feet. How many days will it take for the snail to get out of the well?

I	II	III	IV	V	VI
10-3	7+10-3	14+7	21+7	28+7	35+10
= 7	= 14	= 21	= 28	= 35	= 45

$6$  days

On an analog clock, what is the measure of the smallest angle, in degrees, formed between the two hands at 9:15 am?

Short hand is  $30 \div 4 = 7.5^\circ$  Above 9 on the clock

$$\text{Angle} = 180^\circ - 7.5^\circ$$

$172.5^\circ$



# Level 5 Review Summer Packet

70) Greg rolls two six-sided dice (numbered 1-6). How many ways are there to get a sum of 8?

dice 1		2		3		4		5		6
dice 2		6		5		4		3		2

5 ways

18.75 feet

A bouncy ball can rebound to half the height it was dropped from. What is the height, in feet, of the 3rd rebound if the ball was initially dropped from a height of 150 feet?

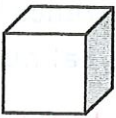
1<sup>st</sup> bounce = 75 feet  
 2<sup>nd</sup> bounce = 37.5 feet  
 3<sup>rd</sup> bounce = 18.75 feet

71) a)

Exponent	Standard form
$2 * 10^6$	2,000,000
$4 * 10^4$	40,000
$(-10)^2$	100
$5 * 10^3$	5,000

Each side of a metal cube is 0.8 cm. What is the volume of the cube?

Volume = (side)<sup>3</sup>  
 =  $0.8 * 0.8 * 0.8$   
 =  $0.64 * 0.8$



0.512 cm<sup>3</sup>

72) What is the sum of the digits of the three consecutive counting numbers whose sum is 312?

$$\begin{array}{r} 104 \\ 3 \overline{) 312} \\ \underline{- 312} \\ 0 \end{array}$$

The #'s are 103, 104, 105

Sum of the digits is

$1+0+3$   
 $1+0+4$   
 $1+0+5$

15

Alva attends 70% of school this academic year. If the total number of school days were 160 days, how many was he absent from school?

Total	Absent	$x = \frac{160 * 30}{100}$
100	30	
160	x	

Direct

48 days

73) Write 4 five digit palindromes (Answers will vary)

10001	12021	12321	40304
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# Level 5 Review Summer Packet

74) What is the interest earned on depositing \$ 1650 in a bank at 3% per year for 2 years?

$$\text{Interest} = \frac{PRT}{100}$$

$$I = \frac{1650 \times 3 \times 2}{100} = 99$$

\$ 99

A model ship is built to a scale of 1 cm: 7 meters. The length of the actual ship is 585.9 meters. What will be the length of the model ship?

model	Original
1 cm	7 m
x	585.9 m

$$7 \overline{)585.9} \quad 83.7$$

83.7 cm

75) If the digits 9 and 4 in the number 45,980 are interchanged, what is the difference between the new and the original number?

Interchanged # 95,480

$$\begin{array}{r} 95,480 \\ - 45,980 \\ \hline \end{array}$$

49,500

What is the least counting number that should be subtracted from 160 to make it a perfect square?

$$12 \times 12 = 144$$

The # to be subtracted

$$\begin{array}{r} = 160 \\ - 144 \\ \hline 16 \end{array}$$

16

76) What is the 61<sup>st</sup> even number?

$$1^{\text{st}} \text{ even } \# = 2$$

$$2^{\text{nd}} \text{ even } \# = 4$$

$$3^{\text{rd}} \text{ even } \# = 6 \text{ (ie } 2 \times 3)$$

$$61^{\text{st}} \text{ even } \# = 2 \times 61 = 122$$

122

77) Find the mean, range, median and mode of the following data set:

19	34	24	16	22	18	16	20	30
----	----	----	----	----	----	----	----	----

$$\text{Mean} = \frac{\text{Sum}(\text{all})}{9}$$

$$= \frac{199}{9} = 22.1$$

Mean	22.1	Range	18
Median	20	Mode	16



# Level 5 Review Summer Packet

78)

Find the mean, Range, median and mode of the following data set:

90, 23, 45, 78, 78, 45, 60, 37

Range =

23	37	45	45	60	78	78	90
----	----	----	----	----	----	----	----

$$\begin{array}{r} 90 \\ -23 \\ \hline 67 \end{array}$$

$$\begin{aligned} \text{Mean} &= \text{Sum}(\text{all}) \div 8 \\ &= 456 \div 8 \\ &= 57 \end{aligned}$$

Mean	57	Range	67
Median	52.5	Mode	45, 78

$$\text{Median} = (45 + 60) \div 2$$

79)

Find the digit in the units place of the following consecutive number products

Product	31 * 22	22 * 23	23 * 94	204 * 25
Digit in units place	2	6	2	0
Product	35 * 26	26 * 47	27 * 58	208 * 29
Digit in units place	0	2	6	2

80)

The product of two consecutive numbers is 110. Using guess and check find the numbers?

$$110 = 10 \times 11$$

10 and 11

81)

The product of two consecutive numbers is 272. Using guess and check find the numbers?

$$\begin{aligned} 272 &= 2 \times 2 \times 2 \times 2 \times 17 \\ &= 16 \times 17 \end{aligned}$$

The 2 numbers are 16 and 17

82)

What is the area of a rhombus whose two diagonals are 11 cm and 18 cm



$$\begin{aligned} \text{Area (Rhombus)} \\ &= \frac{d_1 \times d_2}{2} = \frac{11 \times 18}{2} \end{aligned}$$

$$= 11 \times 9$$

$$99 \text{ cm}^2$$

Level 5 Review Summer Packet

83) Fraction operations

$-\frac{35}{4} \times \frac{12}{21}$ $= \frac{-5 \times 7 \times \cancel{3} \times \cancel{2} \times \cancel{2}}{2 \times \cancel{2} \times \cancel{3} \times 7}$ <div style="border: 1px solid black; width: 50px; height: 50px; margin: 10px auto; text-align: center; line-height: 50px;">-5</div>	$6\frac{3}{7} - 2\frac{3}{5}$ $= 4 + \frac{3}{7} - \frac{3}{5}$ $= 4 + \frac{3 \times 5}{35} - \frac{3 \times 7}{35}$ $= 4 + \frac{15}{35} - \frac{21}{35}$ $= 4 - \frac{6}{35}$ <div style="border: 1px solid black; width: 50px; height: 50px; margin: 10px auto; text-align: center; line-height: 50px;">3 <math>\frac{29}{35}</math></div>	$-3\frac{1}{2} - 2\frac{1}{2}$ $= -\frac{7}{2} - \frac{5}{2}$ $= \frac{-12}{2}$ $= -6$ <div style="border: 1px solid black; width: 50px; height: 50px; margin: 10px auto; text-align: center; line-height: 50px;">-6</div>
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84) What is the area of a rhombus whose two diagonals are 25 cm and 30 cm



$$\text{Area(Rhombus)} = \frac{d_1 \times d_2}{2}$$

$$= \frac{25 \times 30}{2} = 375$$

375 cm<sup>2</sup>

85) In a town, 35 out of 50 vehicles are trucks. What percent of the vehicles are trucks? Round off to the nearest tenth.

$$\begin{aligned} &35 \text{ out of } 50 \\ &= 70 \text{ out of } 100 \end{aligned}$$

70%

86) Find the missing number in the series

Rule = -10

a)	979	969	959	949	939	929
----	-----	-----	-----	-----	-----	-----

Rule = -2, -3, -4 ...

b)	-15	-17	-20	-24	-29	-35
----	-----	-----	-----	-----	-----	-----

Rule = cubes

c)	0	-1	-8	-27	-64	-125
----	---	----	----	-----	-----	------



# Level 5 Review Summer Packet

87) Arrange the following in descending order  
 $5\frac{1}{6}$      $-2\frac{1}{4}$     0    17     $\frac{81}{10}$     7.4

a) 

17	$\frac{81}{10}$	7.4	$5\frac{1}{6}$	0	$-2\frac{1}{4}$
----	-----------------	-----	----------------	---	-----------------

$-\frac{1}{8}$      $\frac{3}{4}$     0     $-\frac{1}{6}$      $-\frac{4}{5}$      $\frac{7}{10}$

b) 

$\frac{3}{4}$	$\frac{7}{10}$	0	$-\frac{1}{8}$	$-\frac{1}{6}$	$-\frac{4}{5}$
---------------	----------------	---	----------------	----------------	----------------

88) Solve

	Column 1		Column 2
a	$5.5 + 2.48 - 1.76 =$ $7.98 - 1.76$	6.22	$4.3 * 100 =$ $4.3$
b	$\frac{7}{33} - \frac{4}{33} + 6 =$ $\frac{1}{11} + 6$	$6\frac{1}{11}$	$6 - \frac{1}{5} + 1 =$ $7 - \frac{1}{5}$
c	$7.798 * 100 =$ $7.798$	779.8	$6.03 - 1.078 =$  4.952
d	$514.3 \div 100 =$ $5.143$	5.143	$33.6 \div 100 =$  0.336
e	$514.3 \div 1000 =$ $0.5143$	0.5143	$514.4 \div 10 =$  51.44

89) Express as decimals

$7\frac{3}{100}$	$\frac{45}{1000}$	$4 + 3\frac{7}{100}$	$5 - \frac{350}{100}$
7.03	0.045	7.07	1.50

$$\begin{array}{r} 6.030 \\ -1.078 \\ \hline \end{array}$$

# Level 5 Review Summer Packet

90) Express as fractions

34.52	145.4	70.3	0.04
$34 \frac{52}{100}$ $= 34 \frac{13}{25}$	$145 \frac{4}{10}$ $= 145 \frac{2}{5}$	$70 \frac{3}{10}$	$\frac{4}{100}$ $= \frac{1}{25}$

91) Solve

Column 1

Column 2

a) $5.56 + 2.48 - 1.37 =$ $8.04 - 1.37$	$6.67$	$4.3 * 100 =$	$430$
b) $\frac{7}{13} - \frac{1}{13} + 4 =$ $\frac{6}{13} + 4$	$4 \frac{6}{13}$	$4 - \frac{1}{5} + 2 =$ $6 - \frac{1}{5}$	$5 \frac{4}{5}$
c) $18.02 * 100 =$	$1802$	$7.334 - 1.078 =$	$6.256$
d) $123.4 \div 100 =$	$1.234$	$7.03 \div 100 =$	$0.0703$
e) $234.3 \div 1000 =$	$0.2343$	$34.3 \div 10 =$	$3.43$

92) A bird is flying at a speed of 13 miles in two hours. Estimate how much time in hours will it need to cover 90 miles?

<u>distance</u>	<u>time</u>	$13 \times 7 = 91$
13 miles	2 Hours	$2 \times 7 = 14$
90 miles $\approx$ 91 miles		$14$ Hours.

93) What is the discount in dollars for a TV if the listed price was \$ 340 at 7 % discount?

discount = 7% of \$ 340

$= \frac{7}{100} \times 340$

$= (238) \div 10$

$\$ 23.80$



# Level 5 Review Summer Packet

94) 8 friends shake hands with each other at a meeting. How many handshakes happened in all?

$$7 + 6 + 5 + 4 + 3 + 2 + 1$$

$$= 10 + 10 + 5 + 3$$

28 handshakes

95) There are 10 red socks, 12 blue socks and 16 white socks in a box. Without looking how many times do you need to draw from the box to ensure that you get a pair of blue socks?

$$10 \text{ Red} + 16 \text{ White} + 2 \text{ Blue}$$

$$= 28 \text{ Socks}$$

Need to be drawn

28 Socks

96) In a garden 2500 rose bushes are planted such the number of rows is equal to the number of columns. How many bushes are planted in each row?

$$2500 = 50 \times 50$$

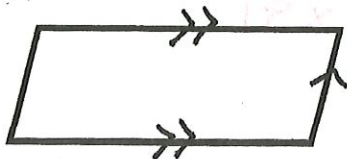
50 plants in each row.

97) Find the area of the following shapes

Parallelogram

$$b = 5.2 \text{ cm}$$

$$h = 3 \text{ cm}$$



$$\text{Area (llgm)}$$

$$= 5.2 \times 3 \text{ cm}^2$$

$$15.6 \text{ cm}^2$$

Rhombus with diagonals

$$18 \text{ cm } 7 \text{ cm}$$



$$\text{Area (Rhombus)}$$

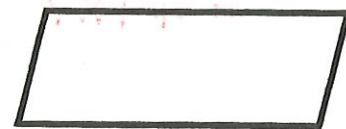
$$= \frac{d_1 \times d_2}{2}$$

$$= \frac{18 \times 7}{2}$$

$$63 \text{ cm}^2$$

Parallelogram with

$$b = 5.02 \text{ cm } h = 3 \text{ cm}$$



$$\text{Area (llgm)}$$

$$= b \times h$$

$$= 5.02 \times 3$$

$$15.06 \text{ cm}^2$$

# Level 5 Review Summer Packet

98)

What is the volume of a rectangular prism with length = 6.1 cm, width = 2.3 cm and height = 2.3 cm

$$\begin{aligned} \text{Volume (Prism)} &= LWH \\ &= 6.1 \times 2.3 \times 2.3 \\ &= 6.1 \times 5.29 \end{aligned}$$

$$32.269 \text{ cm}^3$$

What is the volume of a rectangular prism with length = 5 cm, width = 2.2 cm and height = 1.3 cm

$$\begin{aligned} \text{Volume} &= LWH \\ &= 5 \times 2.2 \times 1.3 \\ &= 11 \times 1.3 \end{aligned}$$

$$14.3 \text{ cm}^3$$

99)

What is the volume of a cube with each side 8 cm

$$\begin{aligned} \text{Volume (cube)} &= (\text{Side})^3 \\ &= 8 \times 8 \times 8 \\ &= 64 \times 8 \end{aligned}$$

$$512 \text{ cm}^3$$

What is the volume of a cube with each side 0.6 cm

$$\begin{aligned} \text{Volume} &= 0.6 \times 0.6 \times 0.6 \\ &= 0.36 \times 0.6 \end{aligned}$$

$$0.216 \text{ cm}^3$$

100)

A concession stand sold  $7^3$  hot dogs, how many hot dogs were sold in all?

$$\begin{aligned} 7^3 &= 7 \times 7 \times 7 \\ &= 49 \times 7 \end{aligned}$$

$$343 \text{ Hotdogs}$$

A concession stand sold  $9^4$  hot dogs, how many hot dogs were sold in all?

$$\begin{aligned} 9^4 &= 9 \times 9 \times 9 \times 9 \\ &= 81 \times 81 \end{aligned}$$

$$6561 \text{ hotdogs}$$

101)

write 100 in the exponential form in as many ways as you can

$$\begin{aligned} 100 &= 100^1 \\ 100 &= 10 \times 10 = 10^2 \\ 100 &= 2 \times 2 \times 5 \times 5 \\ &= 2^2 \times 5^2 \end{aligned}$$

write 60 in the exponential form in as many ways as you can

$$\begin{aligned} 60 &= 60^1 \\ 60 &= 2 \times 2 \times 3 \times 5 \\ &= 2^2 \times 3^1 \times 5^1 \end{aligned}$$

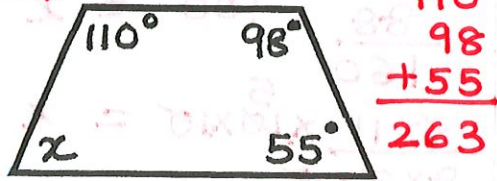


Level 5 Review Summer Packet

102)

Find the measure of the missing angles

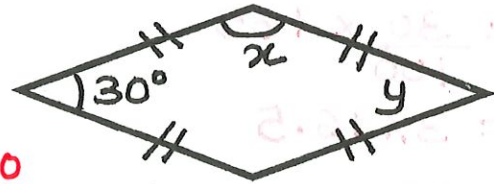
$\text{Sum}(\text{quad}) = 360^\circ$



$x = 360 - 263$

$x = 97^\circ$

Find the measure of the missing angles

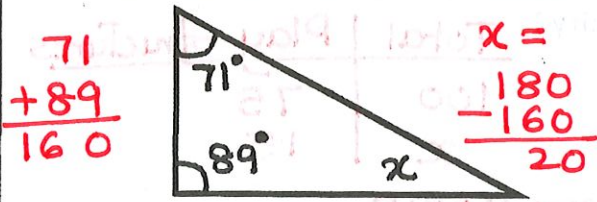


$180 - 30 = 150^\circ$

$x = 150^\circ \quad | \quad y = 30^\circ$

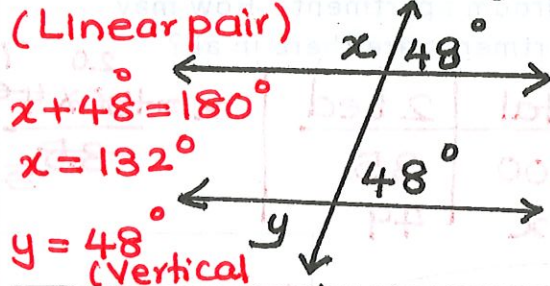
103)

Find the measure of the missing angles



$x = 20^\circ$

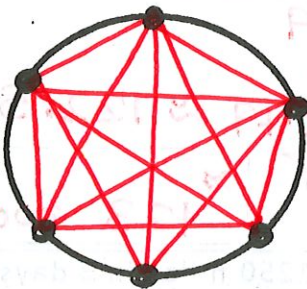
Find the measure of the missing angles



$x = 132^\circ \quad | \quad y = 48^\circ$

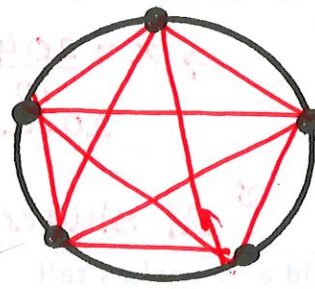
104)

Six points are marked on the circle below. How many triangles can be drawn joining any three points



11

Five points are marked on the circle below. How many triangles can be drawn joining any three points



7

105)

Anna invested \$4000 at 5% interest for 6 years. How much interest will she receive?

$\text{Interest} = \frac{4000 \times 5 \times 6}{100} = 200 \times 6$

\$ 1,200

Anna invested \$ 3500 at 6% interest for 3 years. How much interest will she receive?

$\text{Interest} = \frac{3500 \times 6 \times 3}{100} = 35 \times 18 = 630$

\$ 630

# Level 5 Review Summer Packet

<p>106) On Mars an object weighs 30% as much as on Earth. How much will a 165 pound man weigh on Mars?</p> $= \frac{30}{100} \times 165$ $= 3 \times 16.5$ $= 49.5$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">49.5 pounds</div>	<p>A team won 88 out of 160 games played this year. What percent of the games did they win?</p> $\frac{88}{160} \times 100 = x$ $\frac{8 \times 11}{8 \times 2 \times 10} \times 10^5 = x$ $x = 55$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">55% wins</div>															
<p>107) 35% of the apartments in a complex are two bedroom. If there are 49 two bedroom apartments. How many apartments are there in all?</p> <table style="border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">Total</td> <td style="padding: 5px;">2 bed</td> <td style="padding: 5px;"><math>x = \frac{100 \times 49}{35}</math></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">100</td> <td style="padding: 5px;">35</td> <td style="padding: 5px;"><math>\frac{100 \times 49}{35}</math></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">x</td> <td style="padding: 5px;">49</td> <td style="padding: 5px;">140</td> </tr> </table> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">140 apartments</div>	Total	2 bed	$x = \frac{100 \times 49}{35}$	100	35	$\frac{100 \times 49}{35}$	x	49	140	<p>75% of a city's parks have play structures. If 15 parks have play structures, how many parks are in the city?</p> <table style="border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">Total</td> <td style="padding: 5px;">Play structures</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">100</td> <td style="padding: 5px;">75</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">x</td> <td style="padding: 5px;">15</td> </tr> </table> $x = \frac{100 \times 15}{75}$ $x = 20$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">20 parks</div>	Total	Play structures	100	75	x	15
Total	2 bed	$x = \frac{100 \times 49}{35}$														
100	35	$\frac{100 \times 49}{35}$														
x	49	140														
Total	Play structures															
100	75															
x	15															
<p>108) 17% of the total 120 students at a camp are 7<sup>th</sup> graders. Estimate how many students are 7<sup>th</sup> graders?</p> <table style="border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">Total</td> <td style="padding: 5px;">7<sup>th</sup> graders</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">100</td> <td style="padding: 5px;">17</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">120</td> <td style="padding: 5px;">x</td> </tr> </table> $x = \frac{120 \times 17}{100}$ $x = 20.4$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;"><math>\approx</math> 21 students</div>	Total	7 <sup>th</sup> graders	100	17	120	x	<p>49% of the room in a hotel are booked. If the room has a total of 250 rooms, estimate how many rooms are booked?</p> <table style="border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">Total</td> <td style="padding: 5px;">Booked</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">100</td> <td style="padding: 5px;">49</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">250</td> <td style="padding: 5px;">x</td> </tr> </table> $x = \frac{250 \times 49}{100}$ $x = 122.5$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;"><math>\approx</math> 123 rooms</div>	Total	Booked	100	49	250	x			
Total	7 <sup>th</sup> graders															
100	17															
120	x															
Total	Booked															
100	49															
250	x															
<p>109) An architect build a 25 inches tall model of a 220 feet tall building that he is planning. If the model is 10 inches wide, how wide is the actual building?</p> <table style="border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">model</td> <td style="padding: 5px;">Original</td> <td style="padding: 5px;"><math>x = \frac{10 \times 220}{25}</math></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">25 inch</td> <td style="padding: 5px;">220 ft</td> <td style="padding: 5px;"><math>x = 4 \times 22</math></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">10 inch</td> <td style="padding: 5px;">x</td> <td style="padding: 5px;">88</td> </tr> </table> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">88 feet</div>	model	Original	$x = \frac{10 \times 220}{25}$	25 inch	220 ft	$x = 4 \times 22$	10 inch	x	88	<p>A truck travels 1250 miles in 3 days. How much distance will it cover in 10 days at this rate?</p> <table style="border-collapse: collapse; margin-bottom: 10px;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">miles</td> <td style="padding: 5px;">days</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">1250</td> <td style="padding: 5px;">3</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">x</td> <td style="padding: 5px;">10</td> </tr> </table> $x = \frac{1250 \times 10}{3}$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;">4166.67 miles</div>	miles	days	1250	3	x	10
model	Original	$x = \frac{10 \times 220}{25}$														
25 inch	220 ft	$x = 4 \times 22$														
10 inch	x	88														
miles	days															
1250	3															
x	10															



# Level 5 Review Summer Packet

110) Find the circumference of a dime with a radius of 8.5 mm. Use  $\pi = 3.14$  (round to nearest tenth)

$$C = \pi D$$

$$= 3.14 \times 17$$

$$= 53.38 \text{ mm}$$

$$\approx 53.4 \text{ mm}$$

$D = 8.5 \times 2$   
 $D = 17 \text{ mm}$

53.4 mm

Find the circumference of a nickel with a radius of 20 mm. Use  $\pi = 3.14$  (round to nearest tenth)

$$C = \pi D$$

$$= 3.14 \times 40 \text{ mm}$$

$$= 125.60 \text{ mm}$$

$$= 125.6$$

$d = 40 \text{ mm}$

125.6 mm

111) Find the area of a pizza with diameter 10 inches. Use  $\pi = 3.14$  (round to nearest tenth)

$$A = \pi R^2$$

$$= 3.14 \times 5 \times 5$$

$$= 78.5 \text{ inch}^2$$

$R = 5 \text{ inch}$

78.5 inch<sup>2</sup>

Find the circumference of a pizza with diameter 10 inches. Use  $\pi = 3.14$  (round to nearest tenth)

$$C = \pi D$$

$$= 3.14 \times 10 \text{ inch}$$

$R = 5 \text{ inch}$

31.4 inch

112) Sandy drives 198 miles in 11 gallons of gas and Anna drives 138 miles in 6 gallons of gas. Whose car gives a better average, explain?

$\begin{array}{r} 18 \\ 11 \overline{)198} \\ \underline{-11} \\ 88 \\ \underline{-88} \\ 0 \end{array}$	$\begin{array}{r} 23 \\ 6 \overline{)138} \\ \underline{-12} \\ 18 \\ \underline{-18} \\ 0 \end{array}$
----------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------

Anna's car

what distance will Anna covers if she walks around a pentagonal building with each side = 954 feet

$$\text{Each side} = 954 \text{ feet}$$

$$954 \times 5$$

$$\underline{\quad\quad}$$

$$4770$$

4770 feet

113) How much fence wire will Anna need to fence a rectangular field 4.87 m by 6m at the rate of 20 dollars per meter?

$$\text{Perimeter} = (6 + 4.87) \times 2$$

$$= 10.87 \times 2$$

$$= 21.74$$

$$\times 20 \text{ \$}$$

$$= \$434.80$$

\$ 434.80

A artist painted a Mural 8 feet by 20.7 feet. What is the area and the perimeter of the mural?

$$\text{Area} = 20.7 \times 8$$

$$= 165.6 \text{ feet}^2$$

$$\text{Perimeter} = 2(20.7 + 8)$$

$$= 57.4 \text{ feet}$$

A = 165.6 ft<sup>2</sup>

P = 57.4 ft



# Level 5 Review Summer Packet

114)

convert the following

$1 \text{ gallon} = 8 \text{ pints}$

18 gallons into pints

$$\begin{array}{r} 18 \\ \times 8 \\ \hline 144 \end{array}$$

144 pints

450,000 pounds into Tons

$$2000 \overline{) 450000}$$

225 tons

convert the following

$1 \text{ yard} = 3 \text{ feet}$

182 feet into yards

$$3 \overline{) 182} \begin{array}{r} 60.66 \\ \hline \end{array}$$

60.67 yards

56 fluid ounces into cups

$$8 \overline{) 56} \begin{array}{r} 7 \\ \hline \end{array}$$

7 cups

115)

A tunnel is 8,448 feet long. How much is that in yards?

$$\begin{array}{r} 2816 \\ 3 \overline{) 8448} \\ \underline{-6} \phantom{00} \\ 24 \phantom{00} \\ \underline{-24} \phantom{00} \\ 04 \phantom{00} \\ \underline{-3} \phantom{00} \\ 18 \end{array}$$

2816 feet

Anna's salary is  $\frac{2}{3}$  as much as Meha's salary. Find Meha's salary if Anna makes 46,000 every year?

Anna	Meha	} $x =$ $23000 \times 3$ Meha's salary
2	3	
46,000	x	

$x = \frac{46000 \times 3}{2} = \$69,000$

116)

The price of an article including the sales tax is \$75. What is the actual price of the article without tax if the tax  $\frac{1}{10}$  of the total price.

Total Price	Tax	} $x = 7.5$ Actual Price $= \$ (75 - 7.50)$
10	1	
75	x	

$x = \frac{75 \times 1}{10} = \$67.50$

The price of an article including the sales tax is \$60. What is the actual price of the article without tax if the tax  $\frac{1}{10}$  of the total price.

Total Price	Tax	} Actual Price
10	1	
60	x	

$x = \frac{60}{10} = 6 = \$54$

117)

A coat is selling for  $\frac{3}{4}$ th of the original price. The sale price is \$180. What is the original price?

Original Price	Selling Price	} $x = \frac{4 \times 180}{3}$ $x = 240$
4	3	
x	180	

$\$240$

Jane saves \$46 of a salary each week. If she saves  $\frac{2}{5}$ th of her total earnings. What are her total earnings?

Total earnings	Savings	} $\$46$
5	2	
x		

$x = \frac{5 \times 46}{2} = \$115$

$x = \frac{5 \times 2 \times 23}{2}$  Pg (30)



# Level 5 Review Summer Packet

- 118) Ron read  $\frac{3}{4}$ <sup>th</sup> of a book. Molly said he read  $\frac{1}{3}$ <sup>rd</sup> of the book as much as Ron. What fraction of the book did Molly read?
- Molly Reads =  $(\frac{1}{3} \times \frac{3}{4})$ <sup>th</sup> of book  
 $= (\frac{1}{4})$ <sup>th</sup> of the book
- $(\frac{1}{4})$ <sup>th</sup> of book
- Ann wants to make 5 sets of curtains. Each set required  $5\frac{1}{8}$  yards of fabric. How much fabric does she need?
- $= 5 \times (5\frac{1}{8})$   
 $= 5 \times \frac{41}{8}$   $\rightarrow \approx 25.7$   
 $= \frac{205}{8}$
- 25.7 yards
- 119) A radio station spends  $\frac{1}{40}$ <sup>th</sup> of each of 24 hours on advertisements. How much time does it spend in a week on Advertisements? 7 day = week
- | Total time | Advertisements |
|------------|----------------|
| 40         | 1              |
| 24 hrs     | x              |
- $x = \frac{24 \times 1}{40}$   $\rightarrow \frac{4 \times 2 \times 3}{4 \times 2 \times 5}$   
 $\frac{3 \times 7}{5} = 4.2$  Hrs
- A monitor is on sale at  $\frac{2}{3}$ <sup>rd</sup> of its original price. If the original price is \$354, what is the sale price of the monitor?
- | Original | Sale |
|----------|------|
| 3        | 2    |
| \$ 354   | x    |
- $x = \frac{354 \times 2}{3}$   
 $x = 118 \times 2$
- Sale Price  
 \$ 236
- 120) When my number is divided by 7, the remainder is 3. When my number is divided by 5, the remainder is 4. Find my number if it is greater than 10 but less than 50.
- $\begin{array}{r} ? \\ 7 \overline{) N} \\ \underline{3} \end{array}$   $\begin{array}{r} ? \\ 5 \overline{) N} \\ \underline{4} \end{array}$
- 14+3 (doesn't work)  
 21+3 = 24
- 24
- It takes Anna  $8\frac{1}{3}$  minutes to run a mile and Kaylie takes  $1\frac{1}{5}$  times longer. How many minutes does Kaylie take to run the mile?
- Time Taken by Kaylie  
 $= \frac{6}{5} \times \frac{25}{3} = \frac{2 \times 3 \times 5 \times 5}{5 \times 3} = 10$  min
- 10 minutes
- 121) Rohini wanted to add the first 11 counting numbers, but she mistakenly left out one of the numbers. Otherwise, she added correctly, and got a sum of 59. What number did she leave out?
- Sum (first 11 #'s)  
 $= 1+2+3+4+\dots+11$   
 $= 55+11 = 66$
- So Rohini missed  
 $66-59 = 7$   
 The number she missed is 7

# Level 5 Review Summer Packet

- 122) Camden eats  $\frac{2}{5}$  of a pie. Then Daniel eats  $\frac{3}{4}$  of the remaining pie. What fraction of the pie is left?
- Daniel eats  $\frac{3}{4} \times \frac{3}{5}$  of the pie  
 $= (\frac{9}{20})^{\text{th}}$  of the pie  
 Camden eats  $\frac{8}{20}$   $(\frac{3}{20})^{\text{th}}$  pie is Left
- Laura has 36 books that are either math books or cookbooks. She has 6 more math books than cookbooks. How many cookbooks does she have?
- |            |            |
|------------|------------|
| Cook books | Math books |
| $x$        | $x+6$      |
- $$x+x+6=36$$
- $$2x=30$$
- $$x=15$$
- 15 Cookbooks
- 123) Han is four and one-fourth feet tall. Sandy is six and one-third feet tall. How many inches taller is Sandy than Han?
- Sandy - Han
- $$= 6\frac{1}{3} - 4\frac{1}{4}$$
- $$= \frac{19}{3} - \frac{17}{4}$$
- $$= \frac{19 \times 4 - 17 \times 3}{12}$$
- $$= \frac{76 - 51}{12} = \frac{25}{12} \times 12$$
- 25 inches
- What is the largest number that can be divided into both twenty-one and ninety-eight with no remainder in either case?
- |        |    |    |
|--------|----|----|
| $\div$ | 21 | 98 |
| 7      | 3  | 14 |
| 3      | 1  | 14 |
| 14     | 1  | 1  |
- LCM =  $7 \times 3 \times 14$
- 294
- 124) As a fraction, what is the probability that the first card you draw from a well-shuffled standard deck will be either an ace, a king, or a diamond?
- (52) cards in a deck
- |             |             |                   |
|-------------|-------------|-------------------|
| 13 diamonds | Probability | $= \frac{19}{52}$ |
| 3 Aces      |             |                   |
| 3 Kings     |             |                   |
| 19 card     |             | $\frac{19}{52}$   |
- The ratio of boys to girls in Math Club is two to five. There are a total of forty-nine boys and girls in the club. How many girls are there in Math Club?
- |            |       |                      |
|------------|-------|----------------------|
| boys       | girls | Girls = $7 \times 5$ |
| $2x$       | $5x$  |                      |
| $2x+5x=49$ |       | 35 Girls             |
| $7x=49$    |       |                      |
| $x=7$      |       |                      |
- 125) When I double my age, in years, and then add 19 years, the result is 85 years. How old am I in years?
- Let my age =  $x$
- $$2x+19=85$$
- $$2x=66$$
- $$x=33$$
- 33 years



**5-8**

**Practice: Word Problems**

**Comparing and Ordering Rational Numbers**

<p>1. <b>RAIN</b> The amount of rainfall was measured after a recent storm. The north side of town received <math>\frac{7}{8}</math> inch of rain, and the south side received <math>\frac{13}{15}</math> inch of rain. Which side of town received more rain from the storm?</p> <p><math>\frac{7 \times 15}{8 \times 15} = \frac{105}{120}</math>   <math>\frac{13 \times 8}{15 \times 8} = \frac{104}{120}</math></p> <p>more rain <b>North</b></p>	<p>2. <b>MOVIES</b> Because he sees movies at his local theater so often, Delmar is being offered a discount. He can have either <math>\frac{1}{3}</math> off his next ticket or 30% off his next ticket. Which discount should Delmar choose? Explain.</p> <p><math>30\% = \frac{30}{100} = \frac{3 \times 3}{10 \times 3} = \frac{9}{30}</math></p> <p><math>\frac{1 \times 10}{3 \times 10} = \frac{10}{30}</math> <b><math>\frac{1}{3}</math> is better</b></p>
<p>3. <b>TRACK</b> Willie runs the 110-meter hurdles in <math>17\frac{3}{5}</math> seconds, and Anier runs it in <math>17\frac{6}{11}</math> seconds. Which runner is faster?</p> <p>Compare <math>\frac{3}{5}</math> or <math>\frac{6}{11}</math></p> <p><math>\frac{3 \times 11}{5 \times 11}</math> or <math>\frac{6 \times 5}{11 \times 5}</math> <b>Annie is fast</b></p> <p><math>(\frac{33}{55})</math> or <math>(\frac{30}{55})</math></p>	<p>4. <b>FARMING</b> Cassie successfully harvested <math>\frac{7}{12}</math> of her crop, and Robert successfully harvested 58% of his crop. Which person successfully harvested the larger portion of his or her crop?</p> <p><u>Cassie:</u> <math>\frac{7}{12} \times 100\% = 58.33\%</math></p> <p><b>Cassie harvested a large portion</b></p>
<p>5. <b>TRANSPORTATION</b> My-Lien has enough room in her truck to move 3.385 tons of gravel. Her father has asked her to move <math>3\frac{5}{16}</math> tons. Will My-Lien be able to move all of the gravel in only one trip? Explain.</p> <p><math>16 \overline{) 0.312}</math></p> <p><math>0.385 &gt; 0.312</math></p> <p><b>Yes</b> he will be able</p>	<p>6. <b>WOOD WORKING</b> Kishi has a bolt that is <math>\frac{5}{8}</math> inch wide, and she drilled a hole 0.6 inch wide. Is the hole large enough to fit the bolt? Explain.</p> <p><math>8 \overline{) 5.00}</math></p> <p><math>0.625 &gt; 0.6</math></p> <p>The hole is <b>not</b> large enough</p>
<p>7. <b>PIZZA</b> In a recent pizza-eating contest, Alfonso ate <math>1\frac{3}{8}</math> pizzas, Della ate <math>1\frac{3}{10}</math> pizzas, and Delsin ate <math>1\frac{4}{9}</math> pizzas. Which person won the contest?</p> <p>LCM = 360</p> <p><math>\frac{3}{8} = \frac{135}{360}</math>   <math>\frac{3}{10} = \frac{108}{360}</math></p> <p><math>\frac{4}{9} = \frac{160}{360}</math> <b><math>\frac{4}{9}</math> won the prize</b></p>	<p>8. <b>STUDYING</b> For a recent algebra exam, Pat studied <math>1\frac{8}{15}</math> hours, Toni studied <math>1\frac{11}{20}</math> hours, and Morgan studied <math>1\frac{9}{16}</math> hours. List the students in order by who studied the most.</p> <p><math>\frac{8}{15} &lt; \frac{11}{20} &lt; \frac{9}{16}</math></p> <p>most <b>Pat</b> <b>Toni</b> <b>Morgan</b></p> <p>Pat, Toni, Morgan</p>



**6-1**

**Practice: Word Problems**

**Estimating with Fractions**

**COOKING** For Exercises 1–4, use the recipe shown below.

Lightning Creamed Potatoes
$\frac{1}{3}$ cup water
$1\frac{1}{2}$ teaspoon salt
$3\frac{3}{4}$ cups pared potatoes, cut in bite-size pieces
$\frac{1}{3}$ cup finely chopped onion
$\frac{1}{2}$ cup light cream

serves 6

Pg (34)

<p>1. Daniel wants to serve twelve people the Lightning Creamed Potatoes. how much salt he will need if he doubles the recipe.</p> <p><math>1\frac{1}{2} \times 2 =</math></p> <p><b>3 teaspoons</b></p>	<p>2. Rosita wants to triple the recipe above. how many cups of pared potatoes she will need.</p> <p><math>(3\frac{3}{4}) \times 3</math></p> <p><math>= (3 \times 3) + \frac{3}{4} \times 3</math></p> <p><math>= 9 + 2\frac{1}{4}</math></p> <p><b><math>11\frac{1}{4}</math> potatoes</b></p>
<p>3. Alvin is going to serve six people. He only has <math>1\frac{1}{4}</math> cups of pared potatoes. About how many cups of potatoes will he have to borrow?</p> <p><math>3\frac{3}{4} - 1\frac{1}{4} = 2\frac{2}{4}</math></p> <p><b><math>2\frac{1}{2}</math> potatoes</b></p>	<p>4. Katrina wants to make half of the recipe. About how many cups of potatoes will she need?</p> <p><math>(3\frac{3}{4}) \div 2</math></p> <p><math>= (1\frac{1}{2}) + (\frac{3}{4} \div 2) =</math></p> <p><b><math>1\frac{7}{8}</math> potatoes</b></p>
<p>5. <b>CARPENTRY</b> A board is <math>17\frac{3}{4}</math> inches long. Carmen wants to shorten the length by about <math>1\frac{7}{8}</math> inches. find the length of the board after the board has been shortened.</p> <p><math>17\frac{3}{4} - 1\frac{7}{8} = 17\frac{6}{8} - 1\frac{7}{8}</math></p> <p><math>=</math> <b><math>15\frac{7}{8}</math></b></p>	<p>6. <b>TRACK</b> Akira ran two miles. He ran the first mile in <math>7\frac{3}{4}</math> minutes and the second mile in <math>8\frac{3}{4}</math> minutes. how long it took Akira to run two miles.</p> <p><math>7\frac{3}{4} + 8\frac{3}{4}</math></p> <p><math>= 15 + \frac{1}{2} + 1</math></p> <p><b><math>16\frac{1}{2}</math></b></p>

Pg (34)



# "Math is Cool" Masters - 2005-06

Sponsored by:

5th Grade - May 20, 2006

## COLLEGE KNOWLEDGE BOWL ROUND #1

#	Problem	
1	If the average of three consecutive whole numbers is 24, what is the difference between the largest of these three whole numbers and the smallest?	23, 24, 25 2
2	Find the sum of the quantity of $45 + 45 + 45 + 45 + 45$ , and the quantity of $55 + 55 + 55 + 55 + 55$ .	$5(45+55)$ 500
3	What is the correct time 3600 seconds before 1:30 PM?	$3600 \text{ Sec} = 1 \text{ Hour}$ 12:30 PM
4	Evaluate 11 cubed.	$11 \times 11 \times 11$ 1331
5	Mickey is twice as old as Donald and Donald is twice as old as Huey. If Huey is 12 years old, how old is Mickey, in years?	$H = 12$ $D = 12 \times 2$ $M = 24 \times 2$ 48 years
6	From the first 25 positive whole numbers, 5 numbers, all even, are removed. What percent of the remaining numbers are even?	$(7/20) \times 100$ 35%
7	On a 20-question test, correct answers are worth 5 points, unanswered questions are worth 2 points, and incorrect answers are worth 0 points. What was Caleb's score if he answered 10 questions and got 5 correct?	$(5 \times 5) + (5 \times 0) + (10 \times 2) = 25 + 20$ 45
<b>Extra Problem - Only if Needed</b>		
8	Reduce the following: five hundred eighty five over three thousand three hundred fifteen.	$585/3315$ 3/17

$$\frac{585 \div 5}{3315 \div 5} = \frac{117 \div 3}{663 \div 3} = \frac{39 \div 13}{221 \div 13} = \frac{3}{17}$$



# "Math is Cool" Masters - 2005-06

Sponsored by:  
5th Grade - May 20, 2006

## COLLEGE KNOWLEDGE BOWL ROUND #2

#	Problem	
1	What is the reciprocal of the sum of four sevenths and seven fourths?	$\frac{4}{7} + \frac{7}{4} = \frac{16+49}{28} = \frac{65}{28}$ <span style="border: 1px solid red; padding: 2px;"><math>\frac{28}{65}</math></span>
2	If the pattern ABCDABCDABCD...continues, what would be the 2006 <sup>th</sup> letter in the pattern?	$4 \overline{)2006} R=2$ <span style="border: 1px solid red; padding: 2px;">B</span>
3	Find the largest prime factor of 30 times 40 times 50.	<span style="border: 1px solid red; padding: 2px;">5</span>
4	If I roll two 6-sided dice, what is the probability that I will have a sum of 2 or 12?	$(1+1) \text{ or } (6+6) = \frac{2}{36} = \frac{1}{18}$ <span style="border: 1px solid red; padding: 2px;"><math>\frac{2}{36} = \frac{1}{18}</math></span>
5	A 1200-word story averaged 5 letters per word and had a vowel to consonant ratio of 3 to 5. How many consonants did this story contain?	<span style="border: 1px solid red; padding: 2px;">3750</span>
6	If two angles in a triangle are complementary, what is the measure, in degrees, of the third angle?	$180 - 90$ <span style="border: 1px solid red; padding: 2px;"><math>90^\circ</math></span>
7	A row of 9 soup cans are lined up in a row and 8 are stacked on top, then 7, then 6 and so forth until there is only 1 can stacked on the very top. How many soup cans were used to form this arrangement?	$(9+8+7+6+5+4+3+2+1)$ <span style="border: 1px solid red; padding: 2px;">45 cans</span>
<b>Extra Problem - Only if Needed</b>		
8	How many positive prime numbers have a one's digit of 5?	$5$ <span style="border: 1px solid red; padding: 2px;">only 1</span>

2)  $4 \overline{)2006}$   
 $\begin{array}{r} 501 \\ 4 \overline{)2006} \\ \underline{2004} \\ 2 \end{array} \Rightarrow B$

(3)  $30 \times 40 \times 50$   
 Factorize

(5)  $1200 \times 5 = 6000$

5 consonant for every 8 letters

$\frac{5}{8} \times 6000 = \frac{30000}{8} = 3750$

5/ -Pg (36)



C 1

C 2

1	<p>Find <math>-1273 + 596 + 227 - 104 + 357</math></p> $\begin{array}{r} -1273 \\ -104 \\ +357 \\ \hline -1377 \\ +596 \\ \hline -781 \\ +227 \\ \hline -554 \\ -104 \\ \hline -658 \end{array}$ <p style="text-align: right;">217 1877 -1180 197</p> <p style="text-align: center;">-197</p>	<p>By what smallest number should you multiply the product of 2, 5, 7 and 10 so that the resulting number is a perfect square</p> $2 \times 5 \times 7 \times 10 = 2 \times 5 \times 7 \times 2 \times 5 = 2^2 \times 5^2 \times 7$ <p style="text-align: right;">70</p>
2	<p>By what smallest number should you multiply the product of 4, 9, 7 and 10 so that the resulting number is a perfect square</p> $(4)(9)(7)(10) = (2 \times 2)(3 \times 3)(7 \times 10)$ <p style="text-align: center;">70</p>	<p>By what smallest number should you multiply 432 so that the resulting number is a perfect square</p> $432 = 2^4 \times 3^3 \times 2 = 2^5 \times 3^3$ <p style="text-align: right;">3</p>
3	<p>Add: <math>(2a + 3b)</math>, <math>(7b - 3c)</math> and <math>(6a - b + c)</math></p> $\begin{array}{r} 2a + 3b \\ + 7b - 3c \\ \hline 6a + 9b - 2c \end{array}$ <p style="text-align: center;">8a + 9b - 2c</p>	<p>Add: <math>(2a - 3b)</math>, <math>(8b - 3c)</math> and <math>(6a - 2b + 3c)</math></p> $\begin{array}{r} 2a - 3b \\ + 8b - 3c \\ \hline 6a - 2b + 3c \\ \hline 8a + 3b \end{array}$ <p style="text-align: center;">8a + 3b</p>
4	<p>Two cyclists start cycling at 10:00 am in opposite direction with speed of 15 km/ hour and 20 km/ hour respectively. How far will they be from each other at noon at same day</p> <p>15 km/hr ← 2 Hrs → 20 km/hr</p> <p>⇒ 30 km + 40 km</p>	<p>Two cyclists start cycling at 10:00 am in opposite direction with speed of 15 km/ hour and 20 km/ hour respectively. How far will they be from each other at noon at same day</p> <p style="text-align: right;">70 km</p>

5 / -Pg (37)

C1

C2

1	<p>Which simple interest rate is the greatest (interest payable yearly)?</p> <p>a) 12% per annum  b) 1% per month  c) 3% quarterly  d) All rates are equal</p> <p><u>12x1</u>  <u>1x12</u>  <u>3x4</u></p> <p>All rates are equal</p>	<p>Find the simple interest on \$5000 at the rate of 5% per year for one year?</p> <p><math>\frac{5000 \times 5 \times 1}{100}</math></p> <p>\$ 250</p>
2	<p>Find the simple interest on \$8500 at the rate of 2% per year for 2 years?</p> <p><math>\frac{8500 \times 2 \times 2}{100}</math></p> <p>\$ 340</p>	<p>Find the simple interest on \$5000 at the rate of 5% per year for 3 years?</p> <p><math>\frac{5000 \times 5 \times 3}{100}</math></p> <p>\$ 750</p>
3	<p>Which of the following digits cannot be in the units place of a square number</p> <p>a) 8  b) 0  c) 4  d) 1</p> <p>8</p>	<p>If <math>x = 2, y = -3</math> and <math>z = -2</math>, find the value of <math>3x + 2y - 3z</math></p> <p><math>3(2) + 2(-3) - 3(-2)</math>  <del>6 - 6 + 6</del></p> <p>6</p>
4	<p>If <math>x = -2, y = 2</math> and <math>z = -6</math>, find the value of <math>3x + 2y - 3z</math></p> <p><math>3(-2) + 2(2) - 3(-6)</math>  <math>= -6 + 4 + 18</math>  <math>= -2 + 18</math></p> <p>16</p>	<p>Find the amount received if \$ 3500 at the rate of 3% per year for 2 years?</p> <p><math>\frac{3500 \times 3 \times 2}{100}</math></p> <p>\$ 210</p>

5 - Pg (38)



Solve

	Column 1	Column 2
g)	$3x(3x^2 - 5x)$ $= 9x^3 - (3x)(5x)$ $= 9x^3 - 15x^2$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>9x^3 - 15x^2</math></div>	$-3x(-3x^2 + 5x)$ $(-3x)(-3x^2) - (3x)(5x)$ $9x^3 - 15x^2$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>9x^3 - 15x^2</math></div>
h)	$3x - (3x^2 - 5x)$ $3x - 3x^2 + 5x$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>-3x^2 + 8x</math></div>	$-3x - (-8x - 5x^2)$ $-3x + 8x + 5x^2$ $5x + 5x^2$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>5x^2 + 5x</math></div>
i)	$2x(4x - 3y)$ $(2x)(4x) - (2x)(3y)$ $8x^2 - 6xy$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>8x^2 - 6xy</math></div>	$-2x(4x - 3y)$ $(-2x)(4x) + (2x)(3y)$ $-8x^2 + 6xy$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>-8x^2 + 6xy</math></div>
j)	$-2x - (-3x) + 4x(x)$ $-2x + 3x + 4x^2$ $x + 4x^2$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>4x^2 + x</math></div>	$[-2(x)(y) - 5xy][2]$ $[-2xy - 5xy](2)$ $(-7xy)(2)$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>-14xy</math></div>
k)	$(ab)^2(ab)$ $(a^2b^2)(ab)$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>a^3b^3</math></div>	$[-2xy - 5(x)(y)](-2x)$ $(-2xy - 5xy)(-2x)$ $(-7xy)(-2x)$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>14x^2y</math></div>
l)	$(a^2b)(-ab)$ $(a^2b)(-ab)$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>-a^3b^2</math></div>	$(-3ab)(-2a)(-3)$ $-(3)(2)(3)aba$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"><math>-18a^2b</math></div>

Solve

	Column 1	Column 2
a)	$(4x^2 - y)(-2y)$ $(-8x^2y) + (2y^2)$ $-8x^2y + 2y^2$	$(2x - 3y)(-3x)$ $(2x)(-3x) + [(3y)(3x)]$ $-6x^2 + 9xy$ $-6x^2 + 9xy$
b)	$-3x(-2x)(-2)$ $(6x^2)(-2)$ $-12x^2$	$(2x - 3y)(-3x^2)$ $(2x)(-3x^2) + (3y)(3x^2)$ $-6x^3 + 9yx^2$
c)	$5(-3x) - 4(2y)$ $-15x - 8y$ $-15x - 8y$	$(2x - 3y^2) - (8y)(y)$ $(2x - 3y^2) - (8y^2)$ $2x - 3y^2 - 8y^2$ $2x - 11y^2 \Rightarrow -11y^2 + 2x$
d)	$(2x)(3x)(4x)^2$ $(4x)(4x)(3x)(2x)$ $(16x^2)(6x^2)$ $96x^4$	$(2x^2)(3x)(4x^2)$ $(2x^2)(3x)(4x^2)$ $24x^5$ $24x^5$
e)	$(2x)^2(3x)(4x)^2$ $(2x)(2x)(3x)(4x)(4x)$ $192x^5$	$(-2x)^2(-3x)^2$ $(-2x)(-2x)(-3x)(-3x)$ $(4x^2)(9x^2)$ $36x^4$
f)	$-(2x)^2 - (-3x)^2$ $-(2x)(2x) - (-3x)(-3x)$ $-4x^2 - 9x^2$ $-13x^2$	$(-2x)^2 - (3x)^2$ $(-2x)(-2x) - (3x)(3x)$ $4x^2 - 9x^2$ $-5x^2$