

Final Exam Review Units 1 and 2

Name: _____

Unit 1 Patterns

1. Which numbers are divisible by 4? by 9? How do you know?

a) 90 9 only b) 104 4 only c) 395 neither d) 360 Both

2. A number is missing the tens digit. The number is $51 \square 6$. What could the tens digit be if the number is divisible by 3? 0, 3, 6, or 9 $5+1+3+6=15$

3. Which of these numbers is 324 592 divisible by? How do you know?

a) 2 b) 3 c) 4 d) 5 e) 6 f) 8 g) 9 h) 10 i) 0

4. Write an algebraic expression with a numerical coefficient 2, the variable y and a constant term 4. $2y + 4$

5. Write an algebraic expression for each statement.

a) Nine more than a number $n + 9$

b) Double a number $2n$

c) The quotient of a number and 7 $n \div 7$ or $\frac{n}{7}$

d) Twelve less than a number $n - 12$

e) Six more than eleven times a number $11n + 6$

f) The product of a number and 8 subtracted from 23 $23 - 8n$

g) The sum of 13 and the product of 3 and a number $13 + 3n$

6. Evaluate each expression for $n = 6$.

a) $4n$

$$4(6) \\ 24$$

b) $n + 8$

$$6 + 8 \\ 14$$

c) $\frac{n}{2}$

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

7. Let n represent any term number.

Write a relation for the term for each number pattern. $7n$

Input	1	2	3	4	5
Output	7	14	21	28	35

#8.A) $C = 50 + 15j$

B) $C = 80 + 12j$

C) $C = 50 + 15j$
 $50 + 15(12)$
 $50 + 180$
\$ 230

$C = 80 + 12j$
 $80 + 12(12)$
 $80 + 144$
\$ 224

* cheaper

#9.A)

n	14-n
1	13
2	12
3	11
4	10
5	9

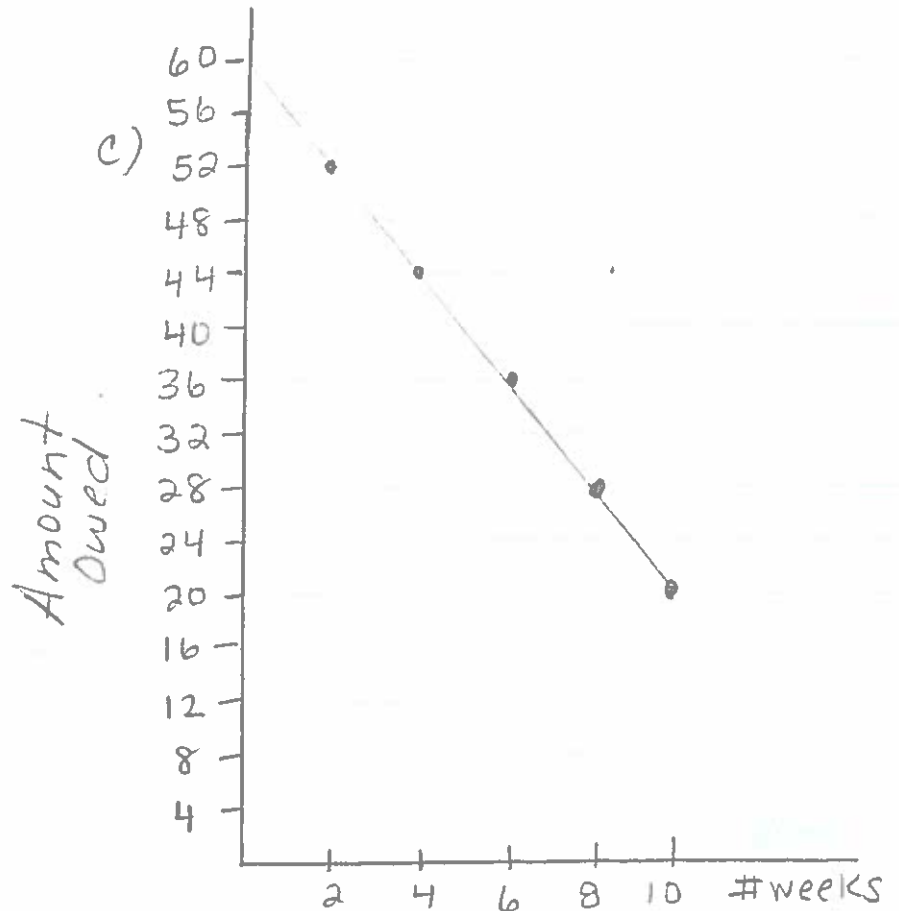
B)

n	3n
1	3
2	6
3	9
4	12
5	15

#10.A) $C = 60 - 4w$

B)

w	C
2	52
4	44
6	36
8	28
10	20



d) $C = 60 - 4w$
 $60 - 4(12)$
 $60 - 48$
 12

Jenny owes \$12 after 12 weeks

e) $0 = 60 - 4w$
 $-60 \quad -60$

$\frac{-60}{-4} = \frac{-4w}{-4}$
 $15 = w$

OR continue table

OR continue graph

Jenny will have her Mom paid after 15 weeks.

#11.
A)

d	t
1	1
2	3
3	5
4	7
5	9
6	11

B) $t = 2d - 1$

C) $t = 2d - 1$
 $2(10) - 1$
 $20 - 1$
 $t = 19$

Unit 2 Integers

1. Write the integer modeled by each set of tiles.

a) $\boxed{R} \boxed{R} \boxed{R} \boxed{R} \quad -4$

b) $\boxed{Y} \boxed{Y} \boxed{Y} \boxed{Y} \boxed{Y} \boxed{Y} \quad +6$

c) $\begin{array}{c} \boxed{Y} \boxed{Y} \boxed{Y} \boxed{Y} \\ \boxed{R} \boxed{R} \boxed{R} \end{array} \quad +1$

d) $\begin{array}{c} \boxed{Y} \boxed{Y} \boxed{Y} \\ \boxed{R} \boxed{R} \boxed{R} \boxed{R} \boxed{R} \boxed{R} \boxed{R} \end{array} \quad -5$

2. Use a model (tiles or a number line) to add.

a) $(+4) + (-6)$ $\left. \begin{array}{l} \text{++++} \\ \text{-----} \end{array} \right\} -2$

b) $(-5) + (-4)$ $\left. \begin{array}{l} \text{-----} \\ \text{-----} \end{array} \right\} -9$

c) $(-7) + (+8)$ $\left. \begin{array}{l} \text{-----} \\ \text{+++++} \end{array} \right\} +1$

d) $(-10) + (+3)$ $\left. \begin{array}{l} \text{-----} \\ \text{+++} \end{array} \right\} -7$

3. Represent each quantity in the statement using an integer. Then write an addition statement for each situation. Find the sum.

a) The temperature in Victoria was $+15^{\circ}\text{C}$ in the afternoon. By midnight, the temperature had dropped 8°C . $(+15) + (-8) = +7$

b) After one round of golf, Tiger Woods' score was -4 . On the second round Tiger scored $+2$. What was his total score? $(-4) + (+2) = -2$

c) An elevator went up 8 floors then down 6 floors. Where did it end up? $(+8) + (-6) = +2$

4. Use a model (tiles or a number line) to subtract.

a) $(+7) - (+4)$ $\left. \begin{array}{l} \text{+++++} \\ \text{++++} \end{array} \right\} +3$

b) $(-9) - (-5)$ $\left. \begin{array}{l} \text{-----} \\ \text{-----} \end{array} \right\} -4$

c) $(+8) - (+12)$ $\left. \begin{array}{l} \text{+++++} \\ \text{+++++} \end{array} \right\} -4$

d) $(-3) - (-8)$ $\left. \begin{array}{l} \text{-----} \\ \text{-----} \end{array} \right\} +5$

5. Write each difference as a sum and add.

a) $(-3) - (+4) = -3 + -4 = -7$ b) $(+7) - (-5) = 7 + 5 = 12$ c) $(-12) - (-12) = -12 + 12 = 0$
 d) $(-9) - (+17) = -9 + -17 = -26$ e) $(+6) - (-6) = 6 + 6 = 12$ f) $(-106) - (-106) = -106 + 106 = 0$

6. Represent each quantity in the statement using an integer. Then write a subtraction statement for each situation. Find the difference.

a) John's score in golf was -6 . Mary's score was -3 . What is the difference in their scores? $(-6) - (-3) = (-6) + (+3) = -3$

b) Faith had \$25. She lent her brother \$8. How much does she have left? $25 - 8 = 17$ or $25 + -8 = 17$

7. a) Find a pair of numbers whose sum is zero. +10 and -10
 b) What word do we use to describe these numbers? zero pair

many possible answers

(P5)

● #1, A)
$$\begin{array}{r} .75 \\ 8 \overline{) 6.00} \\ \underline{56} \downarrow \\ 40 \\ \underline{40} \\ 0 \end{array}$$

$\frac{6}{8} = 0.75$ terminating

$$\begin{array}{r} .333 \\ 3 \overline{) 1.000} \\ \underline{9} \\ 10 \\ \underline{9} \\ 10 \\ \underline{9} \\ 1 \end{array}$$

$\frac{1}{3} = 0.\overline{3}$ repeating

●
$$\begin{array}{r} .6 \\ 5 \overline{) 3.0} \\ \underline{30} \\ 0 \end{array}$$

$\frac{3}{5} = 0.6$ terminating

$$\begin{array}{r} .875 \\ 8 \overline{) 7.000} \\ \underline{64} \\ 60 \\ \underline{56} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

$\frac{7}{8} = 0.875$ terminating

(P6)

$$\begin{array}{r} .8571428 \\ \hline 7 \overline{) 6.0000000} \\ \underline{56} \\ 40 \\ \underline{35} \\ 50 \\ \underline{49} \\ 10 \\ \underline{7} \\ 30 \\ \underline{28} \\ 20 \\ \underline{14} \\ 60 \\ \underline{56} \\ 4 \end{array}$$

$$\frac{6}{7} = 0.\overline{857142}$$

repeating.

#2. $\frac{1}{22} = 0.0\overline{45}$

$$\frac{6}{22} = 0.\overline{27}$$

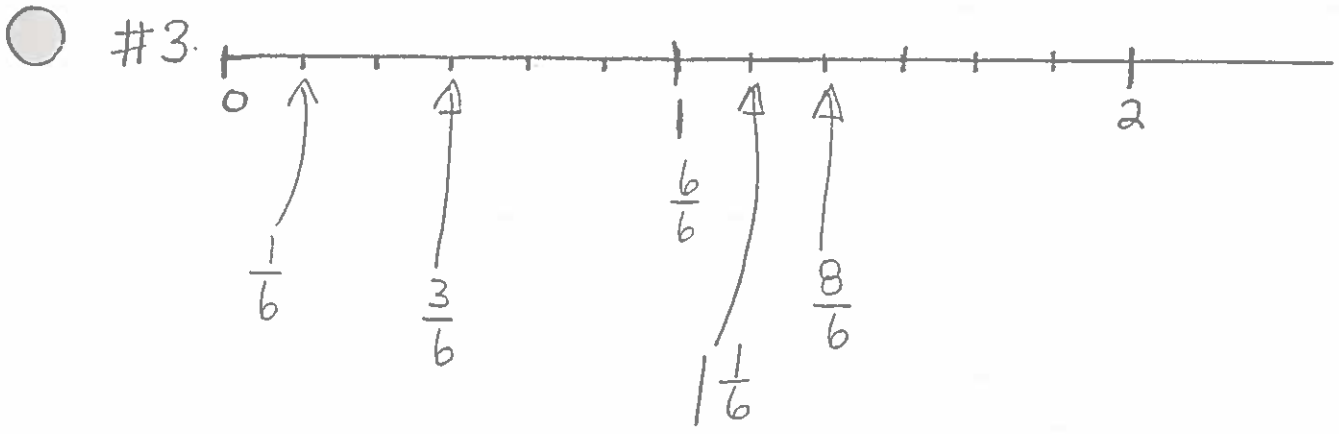
$$\frac{2}{22} = 0.0\overline{9}$$

$$\frac{7}{22} = 0.3\overline{18}$$

$$\frac{3}{22} = 0.1\overline{36}$$

$$\frac{4}{22} = 0.\overline{18}$$

$$\frac{5}{22} = 0.2\overline{27}$$



#4. A) $\frac{1}{4}$ $\frac{1}{3}$ B) $\frac{3}{5}$ 0.8

$\frac{3}{12}$ $\frac{4}{12}$ $\frac{6}{10}$

$\frac{6}{24}$ $\frac{8}{24}$ 0.6 $\frac{7}{10}$ 0.8

$\frac{7}{24}$

0.7

C) 0.21 0.22

$\frac{7}{32}$

0.211, 0.212, 0.213, 0.214, 0.215 etc...

#5.

$$\begin{array}{r} 189.4 \\ - 156.7 \\ \hline 32.7 \end{array}$$

The scenic route is 32.7 Km longer

$$\begin{array}{r}
 2 \\
 1 \\
 \text{6. A) } \begin{array}{r} 1.4 \\ \times 53 \\ \hline 42 \\ 700 \\ \hline 742 \end{array}
 \end{array}$$

B) i) $1.4 \times 5.3 = 7.42$

ii) $14 \times 5.3 = 74.2$

iii) $1.4 \times 530 = 742$

#7.

Area = Length x Width

$$\begin{array}{r}
 \begin{array}{c} 3 \quad 5 \quad 4 \\ 2 \quad 2 \end{array} \\
 19.8 \\
 \times 46.3 \\
 \hline
 11594 \\
 11880 \\
 79200 \\
 \hline
 916.74 \text{ m}^2
 \end{array}$$

#8. A) $3.26 + (4.85 \div 0.05) - 3.75 \times 4.2$

$$0.05 \overline{) 4.85}$$

$$\begin{array}{r}
 97 \\
 5 \overline{) 485} \\
 \underline{45} \\
 35 \\
 \underline{35} \\
 0
 \end{array}$$

$$\begin{array}{r}
 \begin{array}{c} 3 \quad 2 \\ 1 \quad 1 \end{array} \\
 3.75 \\
 \times 4.2 \\
 \hline
 750 \\
 15000 \\
 \hline
 15.750
 \end{array}$$

$$\begin{array}{r}
 97 \\
 + 3.26 \\
 \hline
 100.26
 \end{array}$$

$$\begin{array}{r}
 99 \\
 100.26 \\
 - 15.75 \\
 \hline
 84.51
 \end{array}$$

$3.26 + 97 - 15.75$

$100.26 - 15.75$

84.51

B) $1.899 \div 0.012 + 3.496 \div 1.15$

$$\begin{array}{r}
 0.012 \overline{) 1.899} \\
 \hline
 12 \overline{) 1899.00} \\
 \underline{12} \\
 69 \\
 \underline{60} \\
 99 \\
 \underline{96} \\
 30 \\
 \underline{24} \\
 60 \\
 \underline{60} \\
 0
 \end{array}$$

$$\begin{array}{r}
 1.15 \overline{) 3.496} \\
 \hline
 115 \overline{) 349.60} \\
 \underline{345} \\
 460 \\
 \underline{460} \\
 0
 \end{array}$$

$$\begin{array}{r}
 1 \\
 158.25 \\
 + 3.04 \\
 \hline
 \boxed{161.29}
 \end{array}$$

C) $9.432 \times 2.5 - 3.86 \times 2.3$

$$\begin{array}{r}
 \overset{2}{9}.\overset{1}{4}\overset{1}{3}2 \\
 \times 2.5 \\
 \hline
 47160 \\
 188640 \\
 \hline
 235800
 \end{array}$$

$$\begin{array}{r}
 \overset{2}{3}.\overset{1}{8}6 \\
 \times 2.3 \\
 \hline
 1158 \\
 7720 \\
 \hline
 8878
 \end{array}$$

$$\begin{array}{r}
 \overset{1}{2} \overset{7}{23}.\overset{1}{5}\overset{1}{8}0 \\
 - 8.878 \\
 \hline
 \boxed{14.702}
 \end{array}$$

9. A) 10% of 78 = $\boxed{7.8}$

B) 15% of 60

10% of 60 = 6.

5% of 60 = 3

$\boxed{9}$

C) 20% of 120

10% of 120 = 12

20% of 120 = $\boxed{24}$

10. 30% of 27

10% of 27 = 2.7

$$\begin{array}{r} 30\% \quad \quad \quad 2.7 \\ \quad \quad \quad \times 3 \\ \hline \quad \quad \quad 8.1 \end{array}$$

About 8 students play soccer.

11.

30% off $74.99 \times 0.30 = 22.50$

sale price $\begin{array}{r} 74.99 \\ - 22.50 \\ \hline 52.49 \end{array}$

15% tax $52.49 \times 0.15 = 7.87$

Final price $\begin{array}{r} 52.49 \\ + 7.87 \\ \hline \$60.36 \end{array}$

#12. Ben $\frac{27}{30} = 0.9 \times 100 = 90\%$

Ben completed more questions, because he completed 90% where as Madison completed 83%.

Unit 4

#1. A) Rent 37% = $0.37 \times 2500 = 925$

Food 23% = $0.23 \times 2500 = 575$

Bills 18% = $0.18 \times 2500 = 450$

Personal Expenses 14% = $0.14 \times 2500 = 350$

Car Expenses 8% = $0.08 \times 2500 = 200$

B) 23% of 3000

$0.23 \times 3000 = \boxed{690}$

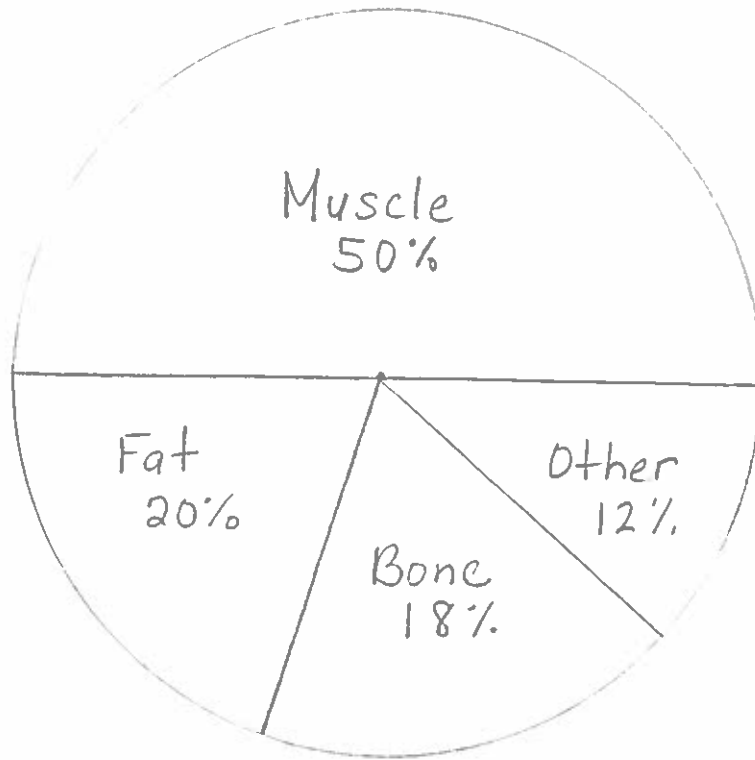
2. A) Fat 20% $0.20 \times 69 = 13.8$

Bone 18% $0.18 \times 69 = 12.42$

Muscle 50% $0.50 \times 69 = 34.5$

Other 12% $0.12 \times 69 = 8.28$

2. B)	Fat	$0.20 \times 360 = 72^\circ$
	Bone	$0.18 \times 360 = 64.8^\circ \rightarrow 65^\circ$
	Muscle	$0.50 \times 360 = 180^\circ$
	Other	$0.12 \times 360 = 43.2^\circ \rightarrow 43^\circ$



#3. $r = 0.5\text{m}$

$$A = \pi r^2$$

$$A = \pi r r$$

$$A = 3.14 (0.5)(0.5)$$

$$A = 0.785 \text{ m}^2$$

#4. A) $d = 0.78\text{cm}$

$$r = \frac{d}{2} = \frac{0.78}{2} = 0.39\text{cm}$$

B) $C = \pi d$

$$C = 3.14 (0.78)$$

$$C = 2.4492 \text{ cm}$$

C) $A = \pi r^2$

$$A = \pi r r$$

$$A = 3.14 (0.39)(0.39)$$

$$A = 0.477594 \text{ cm}^2$$

#5. $C = \pi d$ $d = \frac{C}{\pi} = \frac{12.6}{3.14} = 4.01 \text{ m}$

#6. A) $A = bh$
 $A = (8)(3)$
 $A = 24 \text{ cm}^2$

B) $A = bh$
 $A = (5.0)(2.8)$
 $A = 14.0 \text{ cm}^2$

#7. A) $A = \frac{bh}{2}$

B) $A = \frac{bh}{2}$

$15 = \frac{4h}{2}$

$10.5 = \frac{6h}{2}$

$15(2) = \frac{4h}{2} (2)$

$10.5(2) = \frac{6h}{2} (2)$

$\frac{30}{4} = \frac{4h}{4}$

$\frac{21}{6} = \frac{6h}{6}$

$7.5 = h$

$3.5 = h$

$h = 7.5 \text{ cm}$

$h = 3.5 \text{ cm}$