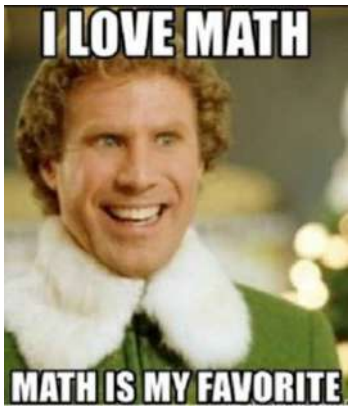
PUYALLUP SCHOOL DISTRICT
A Tradition of Excellence

PSD MATH REVIEW: 7th GRADE MATH



This packet is a general review of important concepts in 7th Grade Mathematics.

In this packet, you'll find:

A) Practice problems by topic. Getting stuck? Not sure how to complete a problem? Go to Schoology and message your teacher or use Khan Academy…

B) Need math help 24/7? Click on this link to Khan Academy. Search by topic to see examples done on video. For example, students could search "factoring quadratics" or "exponential growth and decay" or "rules of logarithms."

These videos can be found at: https://www.khanacademy.org/

C) Contact your math teacher directly via e-mail or Schoology for questions, help & support. Reach out to your teachers!

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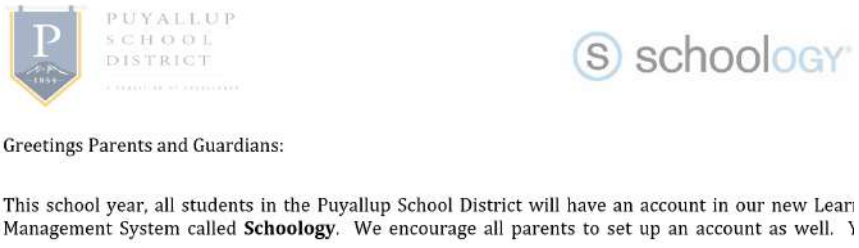
Puyallup School District Virtual Learning Resources

Virtual Learning Opportunities – Puyallup Teachers will communicate lessons and activity resources through your child's Schoology Course or Group. Your child's teacher is ready to support your student through virtual learning!

Clever- a platform that makes it easier for schools to use many popular educational technology products. Essentially, it is a "bookmark" bar for the educational system- curriculum, support, and accessible links are housed in one location. You can access through PSD Favorites folder in the internet browser on a district issued device.

Schoology- The Puyallup School District platform teachers use to communicate, send course updates, collect assignments and assessments, host Schoology conferences (audio and video) and is the electronic gradebook.


PUYALLUP SCHOOL DISTRICT

schoology

Greetings Parents and Guardians:

This school year, all students in the Puyallup School District will have an account in our new Lear
Management System called **Schoology**. We encourage all parents to set up an account as well. Y

Addition and Subtraction of Integers Review

Name:_____
Date_____ Period: _____

No Calculators!

Think of the chip model for each problem:

(-5) + (- 8)	1. How many zero pairs?	2. Final Answer?
9 + (- 16)	3. How many zero pairs?	4. Final Answer?
(-21) + (- 8)	5. How many zero pairs?	6. Final Answer?
(-13) + 18	7. How many zero pairs?	8. Final Answer?

Insert <, >, or = to make each statement true.

9. 22 ◯ -150

10. -33.2 ◯ 33.1

11. $\frac{2}{9}$ ◯ $\frac{1}{3}$

12. -52 ◯ -53

13. -3.2 ◯ -4.1

14. $\frac{10}{7}$ ◯ $1\frac{2}{3}$

Determine if each sum is positive or negative. Circle the correct answer.

15. 9,453 + -345

Positive or Negative

16. -357 + -201

Positive or Negative

17. 927 + -678

Positive or Negative

Find each sum.

18. (-51) + 32 =	19. 92 + (-54) =	20. (-74) + 58 =	21. 12 + (-56) =

Find each difference.

Subtraction Problem	Addition Problem	Answer
22. 32 – (-11) =		
23. 85 – 27 =		
24. 15 – 22 =		
25. (-18) – 22 =		
26. (-34) - (-15) =		

*Write a **number sentence** that models your solution and then write a **complete sentence** stating your answer in context.

27. The carbon atom had 8 protons and 6 electrons. What is the charge of the atom?

Number Sentence: _____

Complete Sentence: _____

28. Samantha earned $12 for mowing the lawn. She then spent $5 on a new shirt. How much money does she have now?

Number Sentence: _____

Complete Sentence: _____

29. Pedro found a treasure map that said to take 12 steps north, then 8 steps south. Where is Steve in relationship to where he started?

Number Sentence: _____

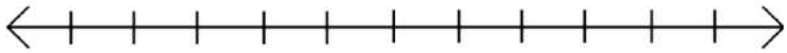
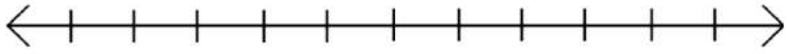
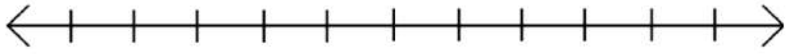
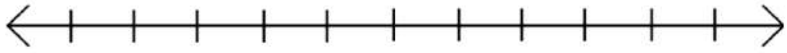
Complete Sentence: _____

Inequalities Review (Calculators Allowed) Name_____

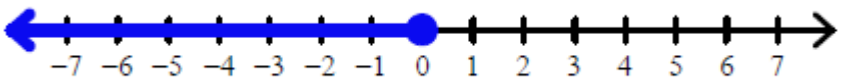
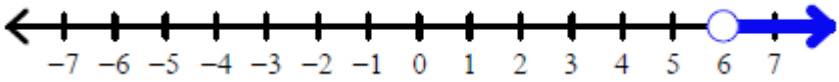
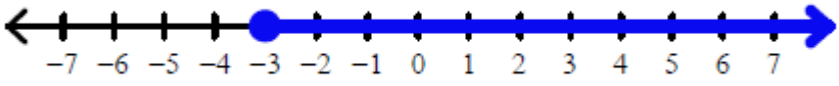
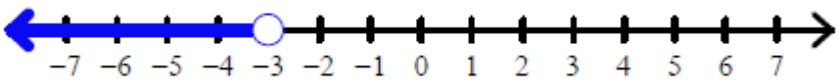
Write inequalities for each statement.

1. Children must be at most 36 inches tall to ride the kiddie roller coaster. Let h = the height required to ride the kiddie roller coaster.	
2. The gym can seat a maximum of 1200 people. Let n = the number of people who can sit in the gym.	
3. Children must be at least 13 to go to a PG-13 rated movie. Let a = the age you must be to attend a PG-13 movie.	

Graph each inequality.

4. $x \leq 7$	
5. $3 < x$	
6. $x \geq 4$	
7. $x < -6$	

Write an inequality for each graph.

8. 	
9. 	
10. 	
11. 	

Match each inequality with the correct solution.

_____12. $3x \leq -12$ A. $x \leq 4$

_____13. $-3x \leq -12$ B. $x \leq -4$

_____14. $3x \leq 12$ C. $x \geq -4$

_____15. $-3x \leq 12$ D. $x \geq 4$

Show all the steps to solve each inequality.

16. $-13x + 46 > -45$	17. $-5(x + 0.2) \leq -16$
18. $15 - 3x + 8x > 7$	19. $-23 \geq -4(x - 0.25)$

Write and solve an inequality for each situation. Write your answer in a complete sentence.

20. Vanessa wants to play a video game that charges you $0.12 per minute. If she has $15 to spend, how many minutes can she play at most?

Let _____ = _____

Inequality:

Answer in a Complete Sentence:

21. The Yellow Cab Taxi charges a flat rate of $3.50 for every cab ride, plus $0.95 per mile. Tofi needs a ride from the airport. He only has $30.10 cash. How many miles can he go?

Let _____ = _____

Inequality:

Answer in a Complete Sentence:

23. Jeremy is two years older than Rachel. The sum of the ages of Jeremy and Rachel is less than 46. How old could Jeremy be?

Let _____ = _____

Inequality:

Answer in a Complete Sentence:

24. A moving company is shipping my stuff on a move from Puyallup to Portland. The maximum weight on the roads for a truck is 80,000 pounds. If the empty truck and trailer weigh 32, 500 pounds and other people have stuff on the truck already weighing 35,000 pounds total, how much can my stuff weigh?

Let _____ = _____

Inequality:

Answer in a Complete Sentence:

Math 7

Name:_____
Date_____ Period: _____

Multiplication and Division of Integers Review (No calculators!)

Tell whether each product is positive or negative. Circle the correct Answer.

1. 6 x -3 = positive or negative
2. -10 x -2 = positive or negative
3. -22 x 3 = positive or negative
4. 3 x 5 = positive or negative
5. 15 x 10 = positive or negative
6. -312 x 47 = positive or negative
7. (-876)(-35)(554)(-234)(-34) = positive or negative
8. (78)(54)(-4)(-987)(1,233)(-78) = positive or negative
9. (-34)(89)(-67)(23)(123)(900)(5) = positive or negative
10. (-76)(80)(-107)(3)(-248)(19) = positive or negative

Simplify each expression:

11. $\frac{-45}{5}$ =
12. -5 ● -6=
13. $\frac{-80}{-10}$=
14. (7)(-6)(-2)=
15. -8 ● -9=
16. $\frac{55}{-5}$ =
17. $\frac{-35}{-7}$=
18. (-12)(0)=
19. (-8)(-4)=
20. (4)(-7)=
21. (-9)(-5)=
22. (10)(-20)(-5)(-2)=
23. $\frac{-63}{-7}$=
24. (8)(-10)=
25. (-1)(– 7)(3)=
26. (8)(-1)(-1)=

27. $\frac{-63}{-7}$=
28. (8)(-10)=
29. (-1)(– 7)(3)=
30. (8)(-1)(-1)=

Solve each story problem using integers. Write a <u>numerical expression</u> that models your solution and then write a <u>complete sentence</u> stating your answer.

31. Tony is borrowing $10 from his mom every week for buying more toy cars for his Hot Wheels collection. How much money does he owe at the end of 7 weeks?

Number Expression: _____

Sentence Answer: _____

33. Linda borrowed $7 a day until she had borrowed a total of $56. For how many days did she borrow money?

Number Expression: _____

Sentence Answer: _____

34. The temperature increased 2º per hour for six hours. How many degrees did the temperature raise after six hours?

Number Expression: _____

Sentence Answer: _____

35. Max lost 24 pounds in 8 weeks on his new weight-loss plan. What was his average change in weight per week?

Number Expression: _____

Sentence Answer: _____

Rational Numbers Review Name _____

No Calculators! Date _____ Class Period _____

Algorithms Review:
Positive + Positive = _____
Negative + Negative = _____
Positive + Negative = _____
Subtraction means to _____
Positive x Positive = _____
Negative x Negative = _____
Positive x Negative = _____
Positive ÷ Positive = _____
Negative ÷ Negative = _____
Positive ÷ Negative = _____

1. What is the sum of a number and its opposite? _____

2. Use a number line to add: 12 + -16.

3. Use a number line to subtract: -4 - (-12)

4. **Multiple Choice** Which of the following is equivalent to: $-5-(-3)$?

a. -5 + (-3) b. -5 – 3 c. 5 – (-3) d. (-5) + 3

5. **Simplify:**

a) $-10+\ -25$ b) $-2\frac{1}{2}+3\frac{3}{4}$ c) $-17-(-20)$

d) $5.25-(-3.50)$ e) 5 - 26 f) $-3.75-2.45$

g) $\frac{1}{6}-(-\frac{2}{3})$ h) -0.5 + $\frac{4}{5}$ i) -0.6 - $\frac{3}{4}$

6. **Identify the number(s) that makes each statement true. You may select more than one number for each statement. Circle correct choices.**

a. -5.2 + _____ = a positive number -6.3 (and/or) 5.3

b. _____ - $2\frac{1}{4}$ = a negative number $\frac{2}{8}$ (and/or) $\frac{5}{4}$

c. _____ x -7.5 = a positive number 8.1 (and/or) -9.3

d. -45 ÷ _____ = a negative number -5 (and/or) 15

7. Simplify: $\frac{1}{3} - (-1.8) + \frac{3}{10} - 15$

8. Simplify: $2\frac{2}{3} - 18.5 + (-4\frac{1}{5})$

9. **Multiple Choice** Which of the following fractions is/are equivalent to $\frac{-12}{72}$? Explain your reasoning.

a. $\frac{-12}{-72}$ b. $\frac{-3}{36}$ c. $\frac{-1}{6}$ d. $\frac{2}{-12}$

Problem 10 - 14: Write a numerical expression that models your solution and then write a complete sentence stating your answer.

10. The temperature reading on a thermometer is -15°F. What is the new reading if the temperature change was 40°F?

11. A person goes from a sauna at 135°F to an outside temperature of -32°F. What is the change in temperature?

12. Tammy's water bill is automatically deducting $160 from her bank account every other month. How much will the deductions total for two years?

13. It took a rocket 5 seconds to rise to 10,125 feet above sea level from the surface. How many feet did the rocket rise per second?

14. A newspaper reports these changes in price of stock over four days: $-\frac{1}{8}, -\frac{5}{8}, \frac{3}{8}, -\frac{9}{8}$. What is the average daily change?

15. **Simplify:**

a) $\frac{-40}{-5}$ b) $-5 \cdot 4$ c) $-3 \cdot -2$

d) $\frac{-26}{2}$ e) $-3 \cdot 5$ f) $\left(-\frac{2}{5}\right) \times \left(-\frac{3}{4}\right)$

g) $\frac{-1}{3} \div \frac{1}{2}$ h) 1.28 ÷ 0.2 i) -2 x -3 x -4 x 5

j) -100 ÷ 2 ÷ -2 ÷ -5 k) $-3\frac{2}{5} \times 5\frac{1}{4}$ l) $-6\frac{1}{2} \div -1\frac{1}{4}$

16. Circle True or False for each of the following equations:

a) 9 – 12 = -9 + (-12) True False b) 5 – (-13) = 5 + 13 True False

c) $\frac{-2}{3} = \frac{2}{-3}$ True False d) $\frac{8}{9} = \frac{-8}{-9}$ True False

17. Decide whether each product is positive or negative. Circle the correct answer.

a) 45 + -84 = positive or negative

b) -298 – (-987) = positive or negative

c) -973 x 785 = positive or native

d) -350 ÷ -25 = positive or negative

18. Insert <, >, or = to make each statement true.

a) |-65| -64

b) |-5| |-99|

c) |-43| 43

d) 0 |-7|

19. 15 ÷ 0 = _____

20. 0 ÷ 15 = _____

21. Simplify:

a) 180 – 40

b) 180 x – 40

c) -180 + -40

d) -180 ÷ -40

e) -180 – 402

f) -180 – (-40)

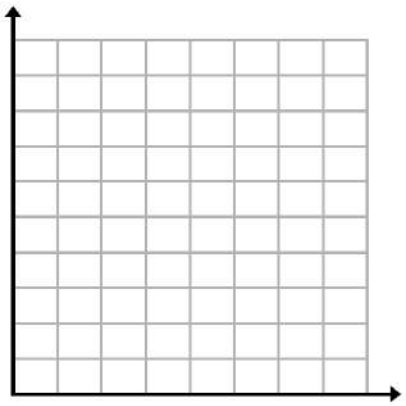
g) 180 – (-40)

h) -180 ÷ 0

Proportional Relationships Review (Calculator) Allowed Name_____

1. Roxana bikes the same distance to and from work every day. By the end of the third day, she had biked 42 km. Complete the table [1], graph [2], and equation [5] to show this relationship.

Time (days)	Total Distance (km)
3	42



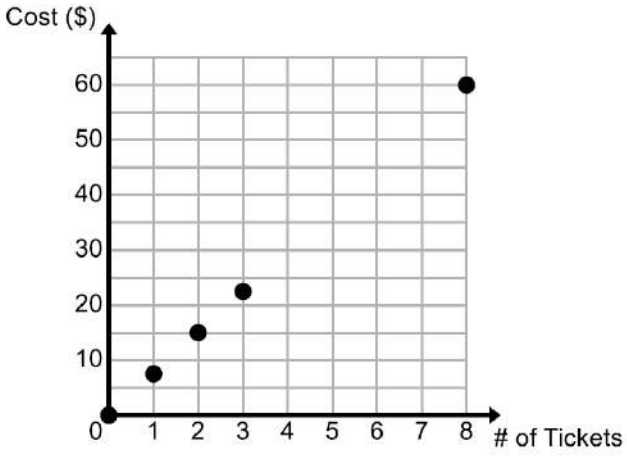
Equation: _____

a. Where do you see the unit rate in each of the representations? [4][6]

b. What does the point $(4, 56)$ represent in this situation? [3]

c. How far does Roxana bike in 5 days? [7]

2. The graph below shows the cost of movie tickets. Complete the table [1] and equation [5] to represent this relationship.

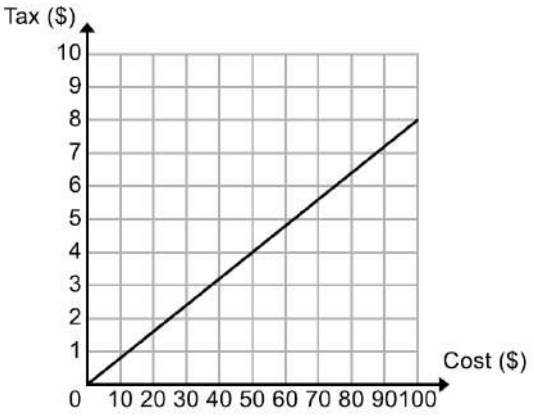


Equation: _____

a. What does the point $(10, 75)$ represent in the situation? [3]

b. What is the unit rate? [6] Write the unit rate as an ordered pair. [4]

5. The graph below shows the tax charged on an item based on the cost of an item. Create the table [1] and equation [5] that match the graph.



Equation: _____

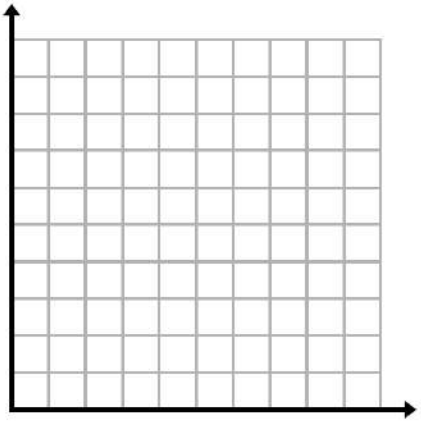
a. What is the unit rate in this situation? Where do you see the unit rate in each of the representations? [6]

b. What is the tax rate as a percentage?

c. How much tax would you pay on a pair of jeans that costs $75? [7]

d. Norah paid $7.20 in tax. How much was her bill before tax? [7]

8. The equation $y = 5x$ shows the relationship between a student's score y and the number of correct answers x on a test. The maximum score a student can earn on the test is 100. Use the equation to complete the table [1] and graph [2].



a. What does the point $(1, 5)$ represent in this situation? [4]

9. The equation $y = 0.1x$ gives the amount y, in dollars, that Susan makes in commission based on her sales x, in dollars. Complete the table [1] to show the relationship between Susan's sales and her commission.

Sales ($)	Commission ($)
0	
100	
500	
	100
	200
	1,000

a. What percentage does Susan make in commission?

b. If Susan made $150 in commission, how much did she sell? [7]

c. If Susan has a $625 sale, how much will her commission be? [7]

d. Describe what a graph of this situation would look like.

10. Are the relationships show in each table proportional? Write the equation for all proportional tables.

a.

Kelsey's Run	
Miles	Hours
$\frac{1}{2}$	$\frac{1}{8}$
2	$\frac{1}{2}$
3.5	$\frac{7}{8}$
12	3

b.

Charlie's Pay	
Sales ($)	Pay ($)
500	1,200
1,000	1,400
1,500	1,600
2,000	1,800

c.

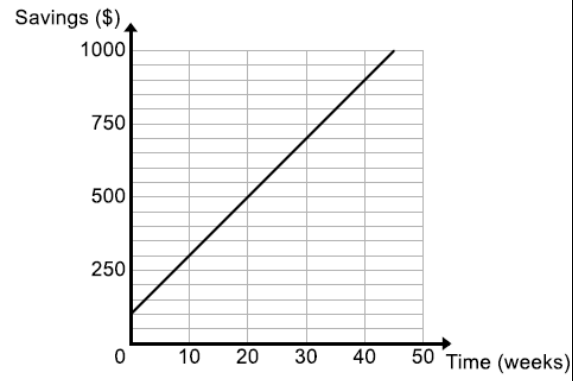
Oscar's Pay	
Time (hours)	Pay ($)
1	13.95
3	41.85
8	111.60
40	558

d.

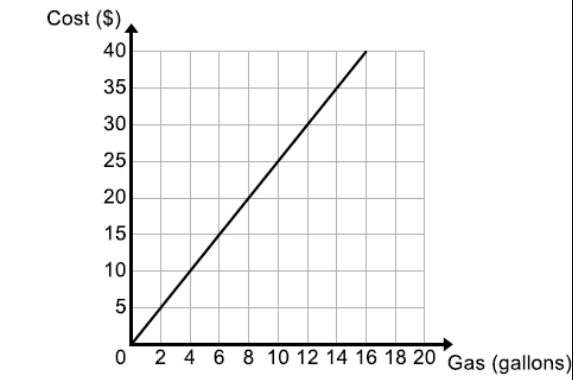
Cost of Peanut Butter	
Ounces	Cost ($)
0	0
15	2.34
40	4.99
64	7.25

11. Are the relationships show in each proportional? Write the equation for all proportional graphs.

a.



b.



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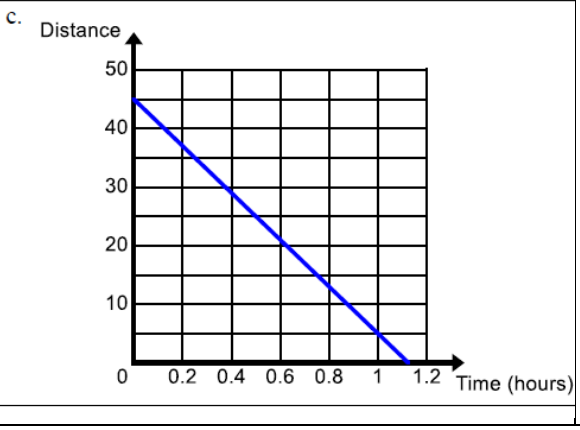
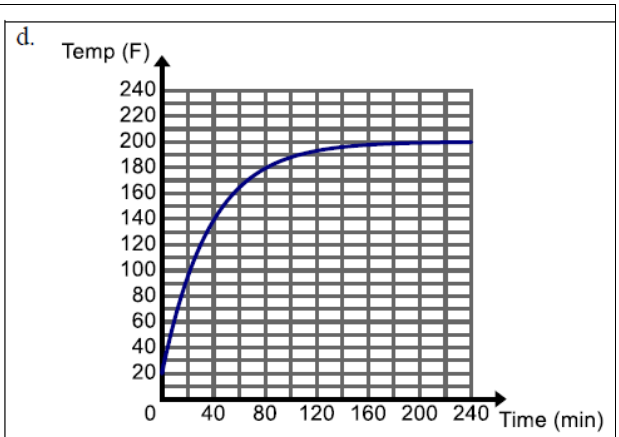
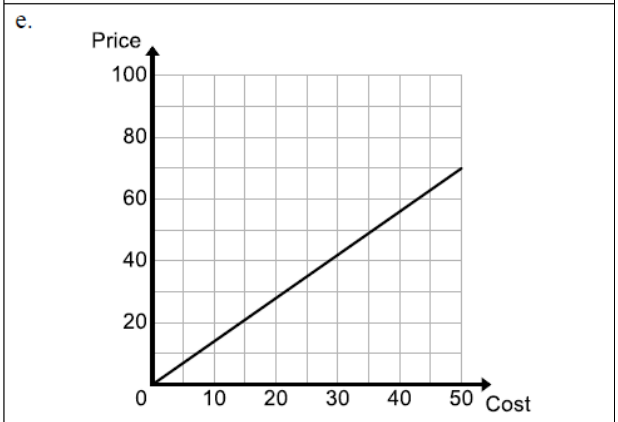


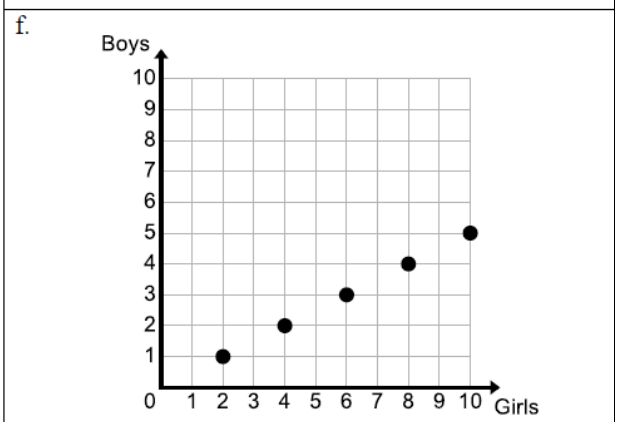
d.



e.



f.



15. Determine whether the equations represent a proportional relationship. Explain. [8]

a. $y = x + 12$ where y represents number of water bottles and x represents number of people Proportional: Yes or No	b. $y = 8x + 50$ where y represents cost of a birthday party, in dollars, and x represents number of guests Proportional: Yes or No	c. $y = 16 - 2x$ where y represents water remaining, in gallons, and x represents time, in minutes Proportional: Yes or No
d. $y = \frac{1}{2}x$ where y represents number of boys and x represents number of girls Proportional: Yes or No	e. $y = 8.25x$ where y represents cost and x represents # of tickets Proportional: Yes or No	f. $5y = 40x$ where y represents number of pictures and x represents number of pages Proportional: Yes or No

Simplifying Algebraic Expressions Review Name_____

Calculator allowed

Simplify the following expressions:

1. 9m – 3 + 4m	2. 71x – 4y + 4x – 4y
3. 6w + 2(4w – 7)	4. 9x – 3(x – 5) + 1
5. 7 – (3n + 6) + 10n	6. $\frac{1}{2}(8x + 10)$ + 12x – 30

Expand or Factor each expression:

Factored Form		Expanded Form
7. 8(-1 – 7w)	→	
	←	8. 3x – 6
9. $\frac{1}{4}(24w + 20)$	→	
	←	10. 15 – 20y

Determine whether the following expressions are equivalent or not. Put a check in the correct box.

	Expressions	Equivalent	Not Equivalent
11.	-25x – 10 and -5(5x - 2)		
12.	(4w + 8) + (-2w - 10) and 2w - 2		
13.	8 – 3(2x – 9) and 10x – 45		

14. Mario can save 40% on headphones at Best Buy with a coupon from the paper. Circle **all of the expressions** he can use to find the discounted price of the headphones with an original price of p.

a. $0.40p$ b. $0.60p$ c. $p - 0.40$ d. $p - 0.40p$

15. Melissa put $900 in her savings account. She spent $25 on gas every week and x dollars on clothes every week. Write TWO expression to show how much money Melissa would have after 10 weeks.

Expression 1: _____

Expression 2: _____

16. Select all **(there may be more than 1)** expressions that are equivalent to

$$0.75x + 0.25(x + 12.4) + (x - 2.1)$$

a. $2x + 1$

b. $x + 1$

c. $x + 3.1 + x + 2.1$

d. $x + 3.1 + x - 2.1$

17. What is the value of p so that the expression $3(n + 5)$ is equivalent to $(n + p)(3)$?

$$3(n + 5) = (n + p)(3)$$

P = _____

Solving Equations Review Name_____

Calculator Allowed

Solve each equation showing **all** algebra steps. Checking your solution is highly recommended!

1. $8x - 4 = 28$	2. $7 = 3x - 2$
3. $-\frac{1}{2}(4x + 2) = -5$	4. $3(x + 1) + 5(-7x + 8) = 75$
5. $7(2y - 5) = 7$	6. $5(2w + 4) = 35$

7. $-(8 + x) + 4(8 + 3x) = -53$	8. $7(w - 8) - 1 = -85$
9. $4\left(x + \frac{1}{4}\right) = 37$	10. $-8.38x + 10.71 = 131.382$

11. There are 15 more boys than girls at Franklin Middle School. If there are a total of 981 students there, how many are boys and how many are girls?

Let _____ = _____

Equation:

Answer in a complete sentence:

_____

_____

Problems 12 and 13

Brad made errors while solving the following problems. For each problem, explain his error and show how to find the correct solution.

Problem	Explain the Error	Correct Method & Solution
$3(2x + 1) + 4 = 10$ $6x + 3 + 4 = 10$ $9x + 4 = 10$ $-4 \quad -4$ $\frac{9x}{9} = \frac{6}{9}$ $x = \frac{2}{3}$		
$3(2x - 4) = 24$ $6x - 4 = 24$ $+4 \quad +4$ $\frac{6x}{6} = \frac{28}{6}$ $x = 4\frac{2}{3}$		

Unit Rates Review Name_____

Calculator allowed

Show your work to justify all of your answers. Label all answers.

1. Calculate the unit rate if you are shopping and you buy $10\frac{1}{2}$ pounds of bananas for $8.50. What is the cost per pound?

2. Calculate the miles per hour if you have driven 504 miles in 8 hours.

3. Joe painted $\frac{3}{4}$ of a bedroom in $\frac{1}{2}$ of a day. How many days will it take for Joe to paint one bedroom?

4. Joe painted $\frac{3}{4}$ of a bedroom in $\frac{1}{2}$ of a day. How many bedrooms will Joe paint in one day?

5. Kerry baked 5 batches of cupcakes in $\frac{8}{10}$ of an hour. How many batches will he bake in one hour?

6. Kerry baked 5 batches of cupcakes in $\frac{8}{10}$ of an hour. How many hours did it take to bake one batch?

Each table below represents a proportional relationship. Use the given information to complete each table.

7.

Hours Worked	Dollars Earned
1	7.50
2	
5	
	67.50

8.

Hours	Distance Travelled (Miles)
1	
2	120
3	
	600

9.Fred Meyer has cheddar cheese priced at $6.50 for 3 pounds. Costco has 10 pounds of cheddar cheese for $21. Who has the better price?

Fred Meyer's unit Rate: _____

Costco's unit Rate: _____

Better Price: _____

10. Trey and Jeff are on a road trip. Trey drives 570 miles in 7.5 hours. Jeff drives 300 miles in 4 hours. Who is driving faster?

Trey's unit rate: _____

Jeff's unit rate: _____

Faster Driver: _____

11. At Safeway, you can buy 4.3 kilograms of ground beef for $21.70 or at Albertsons you can buy 1.6 kilograms for $7.85. Which is the better buy?

Safeway unit rate: _____

Albertsons unit rate: _____

Better Price: _____

12. Monday it took Henry 10 hours to harvest $3\frac{1}{2}$ fields of corn. Tuesday it took him $7\frac{1}{2}$ hours to harvest 3 fields of corn. Which day did Henry work slower?

Monday's unit rate: _____

Tuesday's unit rate: _____

Slower working day: _____

Determine if each set of ratios below form a proportional relationship.
Write yes or no and support your answers.

13. $\frac{7}{10}$ $\frac{21}{27}$

14. 7:4 28:16

15. 1:2 3:9

16. $\frac{2}{5}$ to $\frac{3}{5}$ $\frac{2}{4}$ to $\frac{3}{4}$

17. $\frac{10}{12}$ $\frac{15}{18}$

18. 3.4 to 8 4.8 to 11.25