

Summer Assignment: 7th Grade (Rising 8th) Mathematics

Name: _____

This summer packet is for students completing the 7th grade. This is a requirement and will be graded at the beginning of the next school year. You can refer back to Google Classroom for extra support and additional resources. An answer key has been emailed to your parents so you can check your answers. In order for you to receive full credit, use the following checklist:

Checklist:

Did you read the instructions carefully? _____

Have you answered all the questions completely? _____

Did you show your work? _____

Did you label all units? _____

Did you check your work? _____

Did you check the spelling of words that are given to you in the packet? _____

Did you reread your explanations to yourself to make sure they make sense? _____

Grading:

Criteria	Points Possible	Points Earned
Attention to detail and neatness: name and date written, checklist used, spelling checked, etc.	20	
Thorough completion: all problems complete with work shown	20	
Punctuality	10	
TOTAL	50	

Have a safe and happy summer!

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This is a suggested time-management checklist to help pace yourself over the summer. You can adjust the checklist as you see fit based on your summer schedule.

Month	Date	Specific Lesson	Check when completed
June	6/12 - 6/16	Take a Break!	
	6/19 - 6/23	Lesson 1: The Real Number System	
	6/26 - 6/30	Lesson 2: Rational Number Operations	
July	7/3 - 7/7	Lesson 3: Algebraic Expressions	
	7/10 - 7/14	Lesson 4: Algebraic Equations & Inequalities	
	7/17 - 7/21	Lesson 5: Direct & Inverse Proportions	
	7/24 - 7/28	Lesson 6: Angle Properties & Straight Lines	
August	7/31 - 8/4	Lesson 7: Circles, Volume, & Surface Area	
	8/7 - 8/11	Lesson 8: Statistics	
	8/14 - 8/18	Lesson 9: Probability Lesson 10: Order of Operations	
	8/21 - 8/25	Lesson 11: Mixed Practice (required only for students taking Algebra 1 next year)	

Resource Pages:

Specific Lesson	Resources
Lesson 1: The Real Number System	<ul style="list-style-type: none"> - Real-Number System - Absolute Value
Lesson 2: Rational Number Operations	<ul style="list-style-type: none"> - Adding and Subtracting Integers - Multiply and Divide Integers
Lesson 3: Algebraic Expressions	<ul style="list-style-type: none"> - Evaluating Algebraic Expressions - Simplifying Algebraic Expressions - Factoring Algebraic Expressions
Lesson 4: Algebraic Equations & Inequalities	<ul style="list-style-type: none"> - One Step Addition/Subtraction - One Step Division - One Step Multiplication - One Step Inequalities - Two Step Inequalities - Equations with Distributive Property - Combining Like-Terms - Variables on Both Sides
Lesson 5: Direct & Inverse Proportions	<ul style="list-style-type: none"> - Solving Proportions - Constant of Proportionality - Direct Proportions
Lesson 6: Angle Properties & Straight Lines	<ul style="list-style-type: none"> - Angles Introduction - Naming Angles - Angle Types - Complementary & Supplementary - Vertical Angles - Angles in Transversals
Lesson 7: Circles, Volume, & Surface Area	<ul style="list-style-type: none"> - Radius, Diameter, Circumference - Area of a Circle - Volume of Rectangular Prisms - Volume of Triangular Prisms - Volume of a Cone - Volume of a Cylinder
Lesson 8: Statistics	<ul style="list-style-type: none"> - Mean, Median, and Mode - Range
Lesson 9: Probability	<ul style="list-style-type: none"> - Introduction to Theoretical Probability - Experimental vs. Theoretical
Lesson 10: Order of Operations	<ul style="list-style-type: none"> - Order of Operations

Lesson 1: The Real Number System

Find the absolute value of the following number:

a. $|-4|$ _____

b. $|26|$ _____

c. $|-18|$ _____

d. $|-3|$ _____

e. $|-44|$ _____

f. $|65|$ _____

g. $|-99|$ _____

h. $|-6|$ _____

i. $|-128|$ _____

j. $|28|$ _____

Compare. Use $<$, $>$, or $=$.

k. $|-4|$ _____ $|-5|$

l. 17 _____ $|-17|$

m. $|29|$ _____ $|-29|$

n. 58 _____ $|-59|$

o. 30 _____ $|-28|$

p. $|-7|$ _____ 0

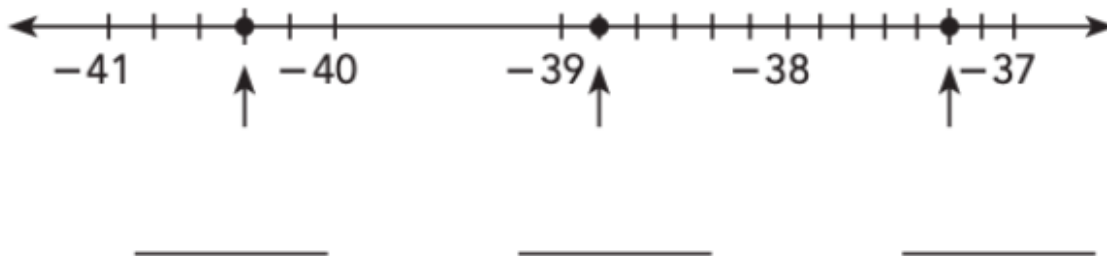
q. $|86|$ _____ $|-68|$

r. $|14|$ _____ -14

s. $|-156|$ _____ $|-165|$

t. $|3|$ _____ $|-3|$

Locate the following rational numbers on the number line:



Which of the following numbers are irrational?

- a. 13.4575356... b. 4.32323 c. -5 d. 17.6

Which of the following numbers is a repeating decimal?

- a. 9.42 b. -13 c. -19.232323... d. 0.4

Find the square root of the following numbers. Round your answer to the nearest tenths place.

$\sqrt{49} =$ _____ $\sqrt{59} =$ _____ $\sqrt{121} =$ _____ $\sqrt{21} =$ _____

Use a calculator and represent each number below as a decimal and order from least to greatest:

$\sqrt{61}$ $\frac{47}{6}$ $2.1 =$ _____

Categorize the following numbers:

Number	Terminating Decimal	Repeating Decimal	Non- terminating Decimal	Rational	Irrational
$\sqrt{50}$					
$\frac{13}{20}$					
2.3					
$2.\bar{3}$					

Plot the following rational and irrational numbers on the number line. Convert the numbers to a decimal to help simplify the number.

$\frac{19}{5}$ $\sqrt{25}$ $\sqrt{17}$ $\frac{9}{4}$



Lesson 2: Rational Number Operations

Write an integer that represents each scenario:

60 meters below the surface: _____ Deposit of \$30 into your bank account: _____

Withdrawal from your bank account of \$20: _____ 45 feet below sea level: _____

Altitude of 1,200 feet: _____ Weight loss of 15 pounds: _____

Stock increased by 4.1%: _____ A loss of 30 yards on a play: _____

Order the following integers from least to greatest.

7, -3, 4, 12, -10, -2: _____

-3, 13, 2, 0, -15, 6: _____

-44, 35, -73, -42, -55: _____

Order the following integers from greatest to least.

2, -5, 6, -9, 11, -12: _____

-10, -14, 3, 0, -7, 5: _____

-65, -34, -27, 12, 57, -98: _____

Compare the pairs of integers using $<$, $>$, or $=$

-19 _____ -11

6 _____ -6

-15 _____ -11

0 _____ -9

3 _____ 5

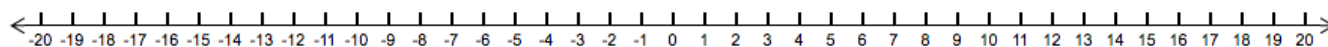
-4 _____ -2

9 _____ -1

-8 _____ -8

Add or subtract the integers.

Use a number line if needed. **NO CALCULATORS FOR THIS PAGE.**



1) $1 + 15 =$ _____

2) $(-6) - (-17) =$ _____

3) $19 - (-2) =$ _____

4) $(-13) + 20 =$ _____

5) $(-4) + (-18) =$ _____

6) $5 - 14 =$ _____

7) $(-12) - 7 =$ _____

8) $10 + (-16) =$ _____

9) $3 + (-20) =$ _____

10) $(-8) - 12 =$ _____

11) $(-15) - (-10) =$ _____

12) $(-19) + 18 =$ _____

13) $17 + 13 =$ _____

14) $11 - (-9) =$ _____

15) $16 - 0 =$ _____

16) $(-7) + (-14) =$ _____

Multiply or divide the integers. **NO CALCULATOR FOR THIS PAGE.**
You may use a multiplication chart if needed.

1) $6 \times (-4) =$ _____

2) $(-105) \div 7 =$ _____

3) $117 \div 13 =$ _____

4) $(-2) \times (-10) =$ _____

5) $(-11) \times 5 =$ _____

6) $108 \div (-9) =$ _____

7) $(-154) \div (-14) =$ _____

8) $13 \times 12 =$ _____

9) $8 \times 3 =$ _____

10) $(-48) \div (-6) =$ _____

11) $(-40) \div 10 =$ _____

12) $4 \times (-15) =$ _____

13) $(-12) \times (-7) =$ _____

14) $35 \div 5 =$ _____

15) $90 \div (-15) =$ _____

16) $(-1) \times 1 =$ _____

Lesson 3: Algebraic Expressions

Evaluate the following expressions for $x = 6$.

1. $7x$

2. $\frac{x}{3}$

3. $29 - x$

4. $\frac{36}{x}$

5. $9x$

6. $x + 41$

7. $3x + x$

8. $2x - 2$

Evaluate the following expressions for $b = 2$ and $c = 7$.

9. $5 + b + c$

10. $16 + b - c$

11. $c - b + 1$

12. $9b - c$

13. $7c - b$

14. $4c + b$

15. $12b + c$

16. $22 + b - c$

Evaluate the following expressions for $y = 8$ and $d = 4$.

17. $\frac{6y}{d}$

18. $\frac{20}{d} + y$

19. $\frac{yd}{2}$

20. $\frac{y}{d} + 6$

Simplify the following expressions:

1) $10x - 8x + 2 + 10$

2) $3a + 7 + 2(3 + a)$

3) $3(m - 5) + m$

4) $2s + 10 - 7s - 8 + 3s - 7$

5) $8c - 4 - 2c + 5$

6) $-4 + 7z + 3 - 2z$

7) $15 + 4(5y - 10)$

8) $2d + 17 - 3 - 2d + 4d$

9) $12n - 8 - 2n + 10 - 4$

10) $8(2k + 1 + 3k)$

11) $4(2b + 2) - 3$

12) $-4 + 8p - 6p - 5 + 20p$

Factor the following algebraic expressions:

1) $6x + 9$

2) $-20y - 5z$

3) $15 - 3a$

4) $2m + 2$

5) $39u - 52v + 13$

6) $10z - 60$

7) $44p + 11q$

8) $42 + 35w$

9) $81n - 36$

10) $40b - 80c - 40d$

Lesson 4: Algebraic Equations & Inequalities

Solve each equation or inequality by showing your work in order to receive full credit. Use a calculator to check all computational procedures. Be sure to circle your answers.

$$x + 8 = 10$$

$$20 = y - 10$$

$$8x = 40$$

$$v \div 3 = 12$$

$$w - 8 = 30$$

$$k + 5 = -65$$

$$27 = -9x$$

$$x \div -5 = 5$$

$$-32 = y + 3$$

$$-4 = x - 6$$

$$\frac{x}{3} + 5 = 12$$

$$\frac{y}{4} - 4 = 5$$

$$2w + 6 = 24$$

$$\frac{x}{-3} + 9 = 2$$

$$10(2x + 3) = 130$$

$$\frac{x + 5}{3} = 8$$

$$30 = 3y + 9$$

$$5x + 3 = 2x - 18$$

$$3(5x - 7) = 9$$

$$10x + 4 + 2x = 40$$

$$17x - 10x + 9 = 30$$

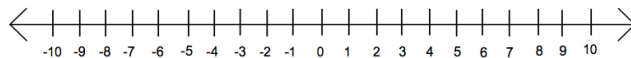
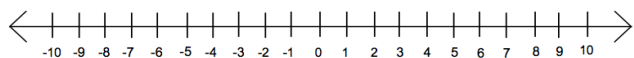
$$8x + 3 = 6x + 21$$

Solve and graph the one and two step inequalities.

$<$	\leq	$>$	\geq
Open dot	Closed dot	Open dot	Closed dot

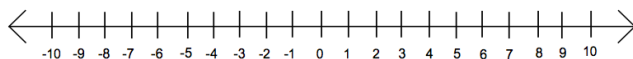
$$x + 5 < -3$$

$$y - 1 \geq 3$$



$$4w \leq 16$$

$$c \div 2 > -1$$

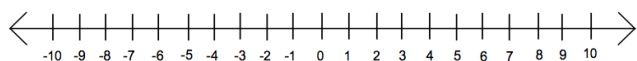


$$k + 2 < -5$$

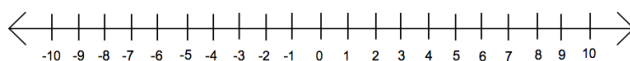
$$\frac{y}{5} > -2$$



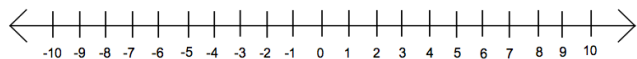
$$2x + 5 > 15$$



$$\frac{y}{1} - 4 > -1$$



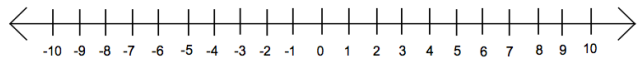
$$4x - 4 > -8$$



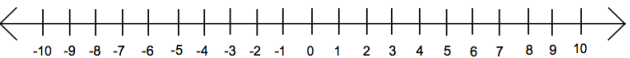
$$\frac{m}{6} - 9 < -9$$



$$3x + 1 \leq 10$$



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



Lesson 5: Direct & Inverse Proportions

Find the value of x that will make each proportion true. **Show your work** to support your answer.

$$\frac{3}{4} = \frac{24}{x}$$

$$\frac{2}{5} = \frac{18}{x}$$

$$\frac{2}{7} = \frac{x}{56}$$

$$\frac{2}{9} = \frac{x}{51}$$

$$\frac{5}{x} = \frac{18}{30}$$

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

$$\frac{27}{6} = \frac{35}{x}$$

$$\frac{1}{9} = \frac{17}{x}$$

$$\frac{1.7}{4} = \frac{4.2}{x}$$

$$\frac{x}{2.3} = \frac{12.4}{9}$$

Is y directly proportional to x? If yes, state the constant of proportionality ($\frac{y}{x}$) and write the direct proportion equation in the form of $y=kx$.

x	1	2	3
y	4	8	12

Is y directly proportional to x? _____

Constant of proportionality: _____

Equation: _____

x	3	6	9
y	10	30	70

Is y directly proportional to x? _____

Constant of proportionality: _____

Equation: _____

x	3	6	9
y	10	30	70

Is y directly proportional to x? _____

Constant of proportionality: _____

Equation: _____

x	2	4	6
y	40	80	120

Is y directly proportional to x? _____

Constant of proportionality: _____

Equation: _____

The table shows the relationship between distance in kilometers and distance in miles. The distance in kilometers is directly proportional to the distance in miles.

Distance (x miles)	20	30	50
Distance (y kilometers)	32.2	48.3	80.5

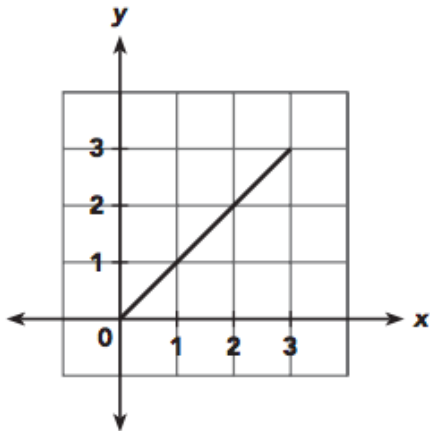
a) Find the constant of proportionality. What does this value represent in this situation?

b) Write the direct proportion equation.

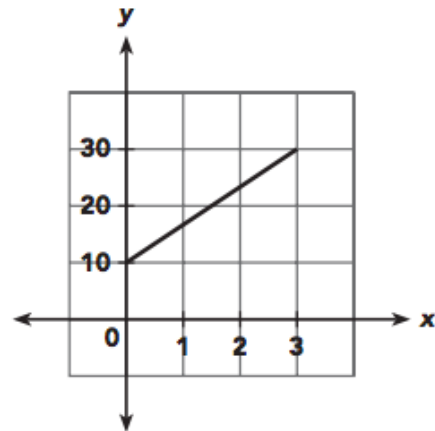
c) How many kilometers are there in 70 miles?

Tell whether each graph represents a direct proportion. If so, find the constant of proportionality.

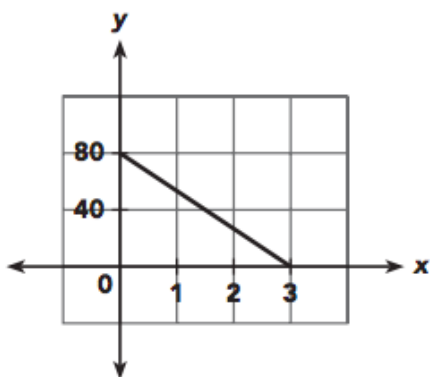
1.



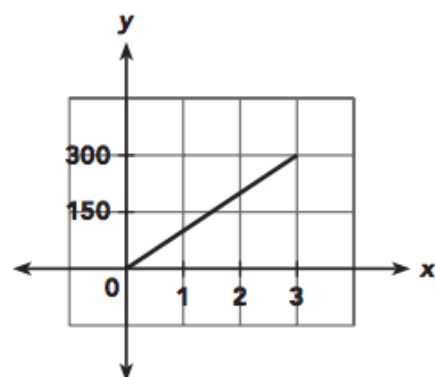
2.



3.



4.

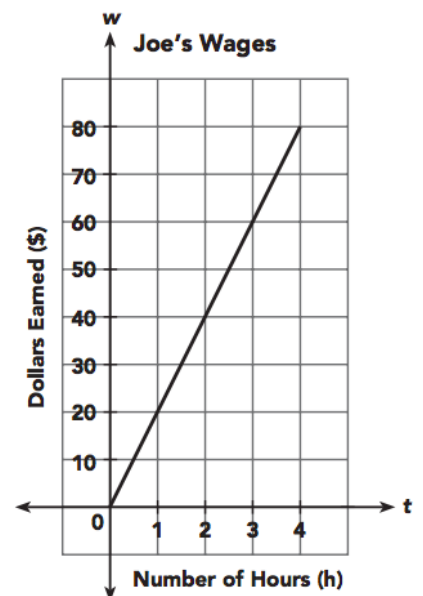


The amount of money Joe earns is directly proportional to the number of hours he works. The graph shows the amount of money, w dollars, Joe earns in t hours.

a) Find the constant of proportionality. What does this value represent in this situation?

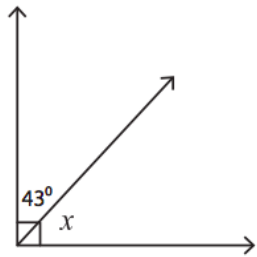
b) How much does Joe earn if he works 3 hours?

c) How long does Joe work if he earns \$90?

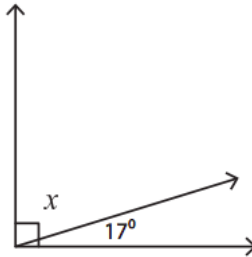


Lesson 6: Angle Properties and Straight Lines

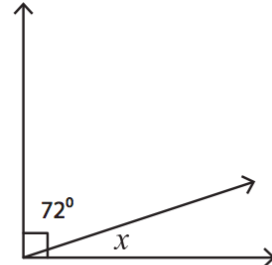
Calculate the measure of the missing angle.



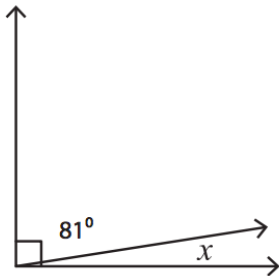
$$x = \underline{\hspace{2cm}}$$



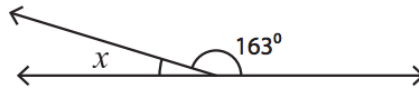
$$x = \underline{\hspace{2cm}}$$



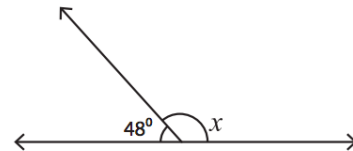
$$x = \underline{\hspace{2cm}}$$



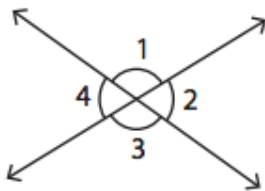
$$x = \underline{\hspace{2cm}}$$



$$x = \underline{\hspace{2cm}}$$

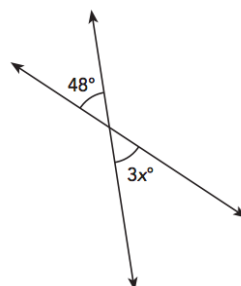
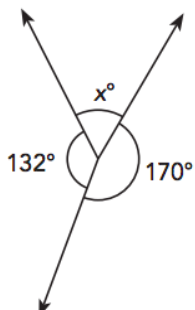
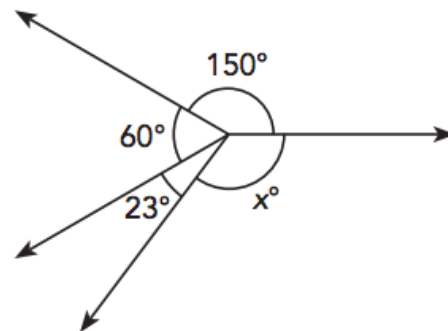


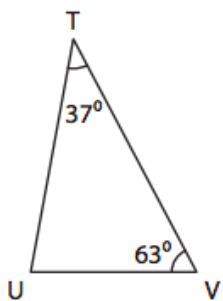
$$x = \underline{\hspace{2cm}}$$



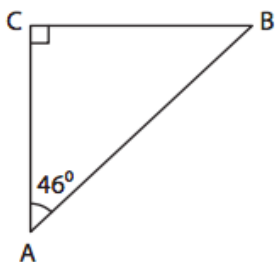
$$m\angle 1 = 113^\circ, \quad m\angle 2 = \underline{\hspace{2cm}}$$

$$m\angle 3 = \underline{\hspace{2cm}}, \quad m\angle 4 = \underline{\hspace{2cm}}$$

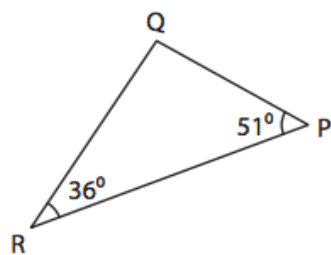




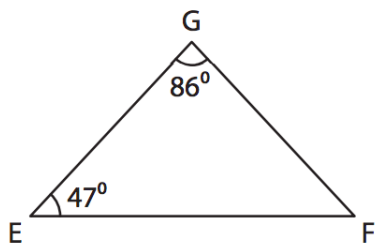
$$m\angle U = \underline{\hspace{2cm}}$$



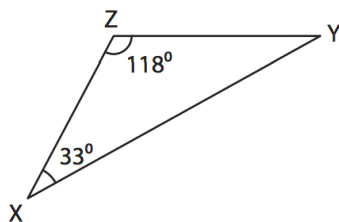
$$m\angle B = \underline{\hspace{2cm}}$$



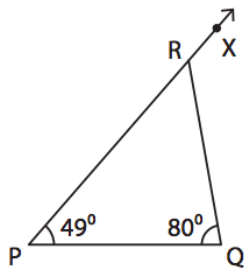
$$m\angle Q = \underline{\hspace{2cm}}$$



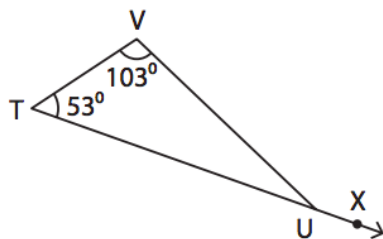
$$m\angle F = \underline{\hspace{2cm}}$$



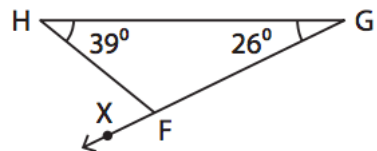
$$m\angle Y = \underline{\hspace{2cm}}$$



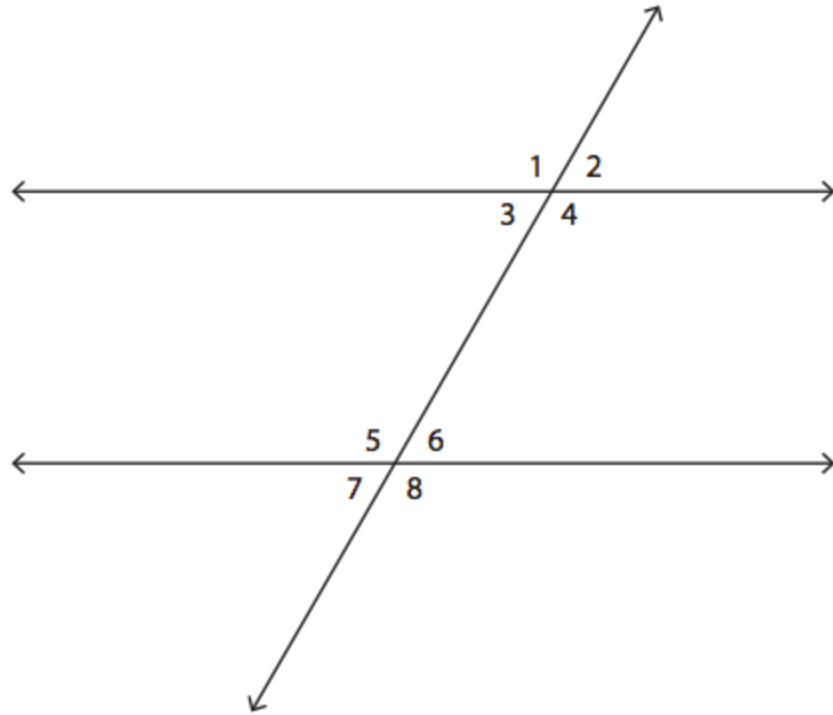
$$m\angle QRX = \underline{\hspace{2cm}}$$



$$m\angle VUX = \underline{\hspace{2cm}}$$



$$m\angle HFX = \underline{\hspace{2cm}}$$



List all of the interior angles: _____

List all of the exterior angles: _____

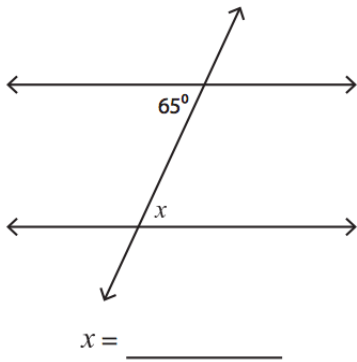
List all the pairs of alternate interior angles: _____

List all the pairs of alternate exterior angles: _____

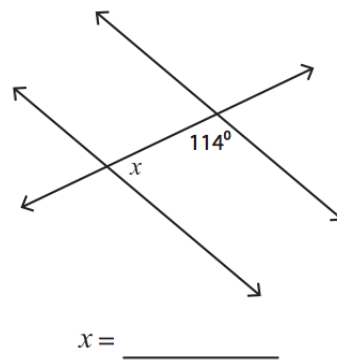
List 3 pairs of corresponding angles: _____

Find the value of x in each set of angles:

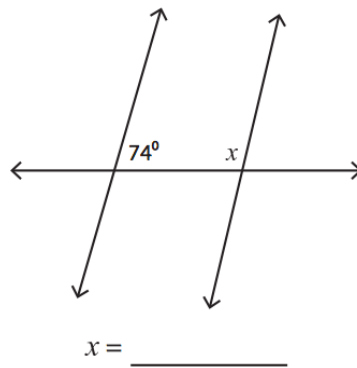
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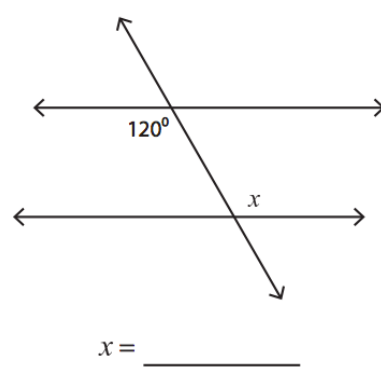
2)



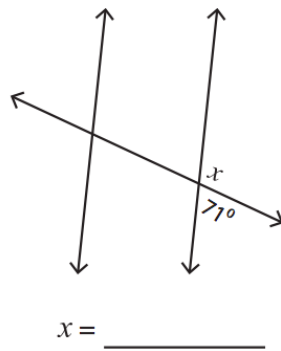
3)



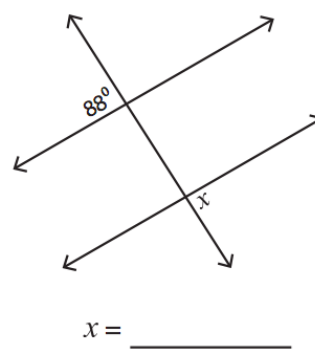
4)



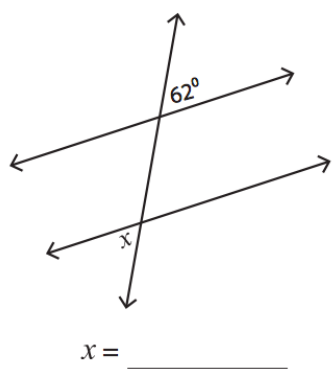
5)



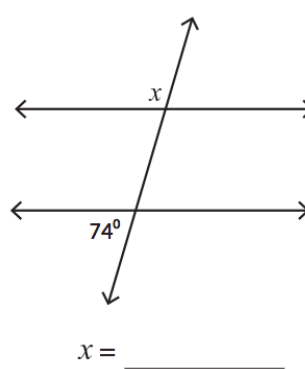
6)



7)



8)



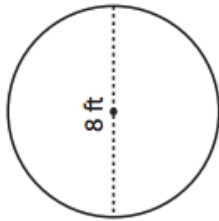
Lesson 7: Circles, Volume & Surface Areas

Calculate the area and circumference of the following circles. **Show work.**

Use 3.14 for π .

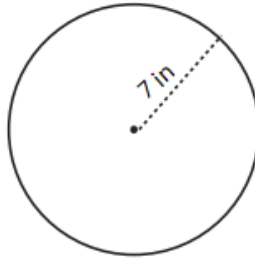
$$\text{Circumference} = \pi d \qquad \text{Area} = \pi r^2$$

1)



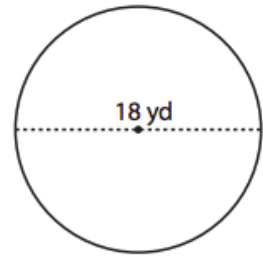
Area = _____
Circumference = _____

2)



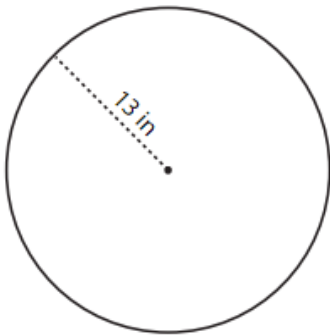
Area = _____
Circumference = _____

3)



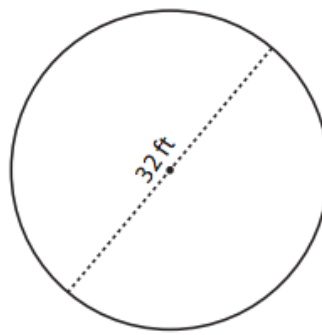
Area = _____
Circumference = _____

4)



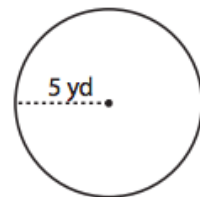
Area = _____
Circumference = _____

5)



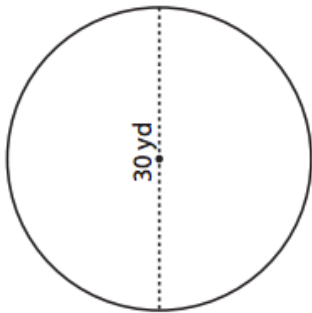
Area = _____
Circumference = _____

6)



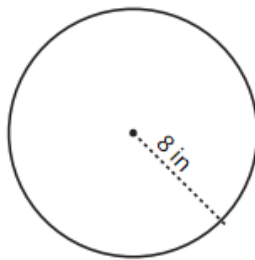
Area = _____
Circumference = _____

7)



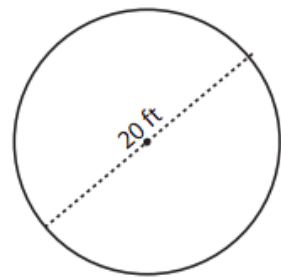
Area = _____
Circumference = _____

8)



Area = _____
Circumference = _____

9)



Area = _____
Circumference = _____

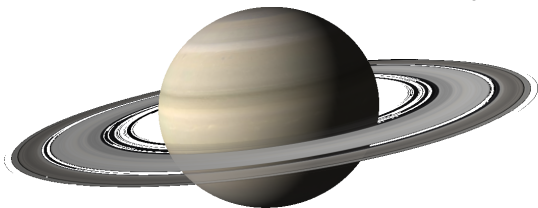
The radius of Venus is 3,760.4 miles. Find the following information:



Diameter: _____

Circumference: _____

The diameter of Saturn is 72,367 miles. Find the following information:



Radius: _____

Circumference: _____

Formulas

Rectangular Prism:

$$V = l \times w \times h$$

Triangular Prism:

$$V = \frac{l \times w \times h}{2}$$

Pyramid:

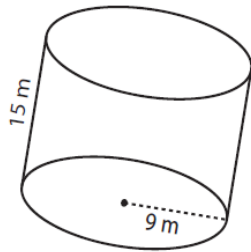
$$V = \frac{l \times w \times h}{3}$$

Cylinder:

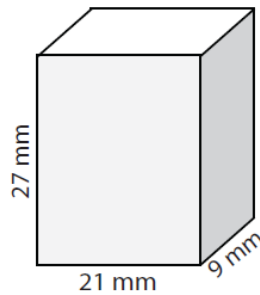
$$V = \pi r^2 \times h$$

Cone:

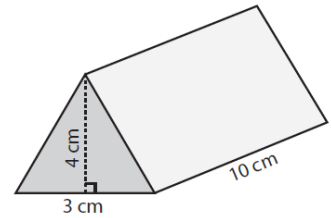
$$V = \frac{\pi r^2 \times h}{3}$$



Volume = _____



Volume = _____

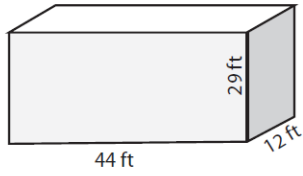


Volume = _____

Workspace:

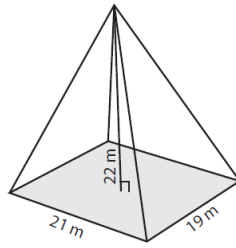
Workspace:

Workspace:



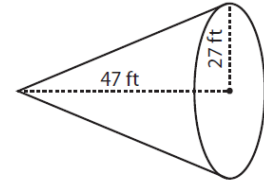
Volume = _____

Workspace:



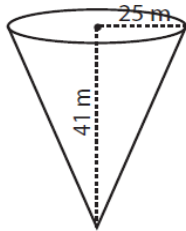
Volume = _____

Workspace:



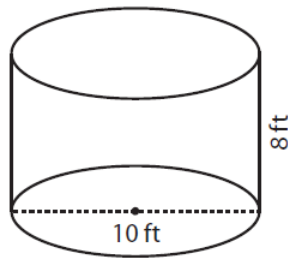
Volume = _____

Workspace:



Volume = _____

Workspace:



Volume = _____

Workspace:

Lesson 8: Statistics

Mean - Finding the mean is the same as finding the _____. In order to find the mean, _____ up all of the numbers in the data set and then divide it by the amount of numbers in the data set.

Median - In order to find the median, you must rewrite the numbers from _____ to _____. Then, find the middle number in the data set. If there are two numbers in the middle, find the average of the two numbers.

Mode - The mode is the _____ occurring number in the data set. If there are no numbers that occur the most, you can write, "none".

Range - To find the range, take the _____ number and subtract the _____ number.

Word Bank:

most add greatest biggest smallest average least

Find the measures of central tendency. Be sure to order your data from least to greatest.

1) 24, 31, 12, 38, 12, 15

2) 5, 28, 16, 32, 5, 16, 48, 29, 5, 35

Mean : _____ Median : _____

Mean : _____ Median : _____

Mode : _____ Range : _____

Mode : _____ Range : _____

3) 53, 13, 34, 41, 26, 61, 34, 13, 69

4) 85, 58, 72, 85, 46, 93

Mean : _____ Median : _____

Mean : _____ Median : _____

Mode : _____ Range : _____

Mode : _____ Range : _____

Nine conical flasks have sodium chloride solution of different quantities. The amount of solution (ml) in each flask is given below.

2, 10, 16, 2, 20, 18, 22, 14, 9

Mean : _____ Median : _____ Mode : _____ Range : _____

Order data: _____

Ten students from a class participated in a math quiz. The scores obtained by them were recorded as follows.

11, 6, 7, 13, 1, 13, 16, 7, 13, 16

Mean : _____ Median : _____ Mode : _____ Range : _____

Order data: _____

Ray's music album had 15 rock songs, 8 karaokes, 12 hip hops, 10 pop songs, 15 lullabies, 13 jingles and 17 rap songs.

Mean : _____ Median : _____ Mode : _____ Range : _____

Order data: _____

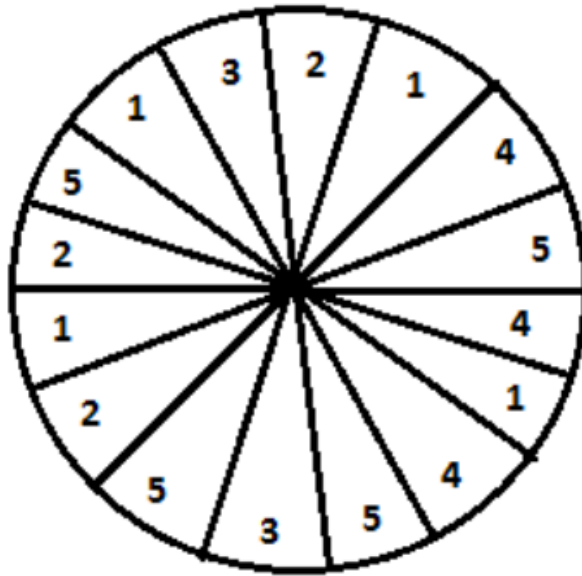
Lesson 9: Probability

The marbles pictured below are gray, white, and black. They are placed in a bag and one is drawn at random.



1. Which color marble is least likely to be drawn from the bag? _____
2. What is the probability of drawing the black marble from the bag? _____
3. What is the probability of drawing a gray marble? _____
4. What is the probability of the drawing a white marble? _____
5. What is the probability of drawing a marble that is not white? _____
6. Would you be more likely to draw a marble that is not black or a marble that is not gray?
Explain your answer.

7. If three more black marbles were added to the bag,
what would be the probability of drawing a black marble? _____



Work Space

What is the probability of choosing an odd number?

Answer:

What is the probability of choosing an even number?

Answer:

What is the probability of choosing a prime number?

Answer:

What is the probability of choosing 1 or 5?

Answer:

What is the probability of choosing 3 or 4?

Answer:

Numbers from 1 to 50 are written on a piece of paper and dropped into a box. A paper is chosen at random.

Find the probability of choosing multiples of 10. Answer: _____	
Find the probability of choosing an even number. Answer: _____	
Find the probability of choosing an odd number. Answer: _____	
Find the probability of choosing factors of 36. Answer: _____	
Find the probability of choosing neither odd nor prime. Answer: _____	

Lesson 10: Order of Operations

Simplify using order of operations. Show each of your steps to support your work. You may use a calculator for computation.

1) $5 + 8 \div 2 - 7$

Ans =

2) $12 \times 3 - 42 + 20$

Ans =

3) $25 \times 2 - 42 \div 6 + 18$

Ans =

4) $3 + 32 \div 8 - 9$

Ans =

5) $4 \times 5 + 3^3 - 15 \div 5$

Ans =

6) $9 \times 3^2 \div 9 - 4$

Ans =

7) $3^3 - (76 \div 2)$

Ans =

8) $(11 + 9) \times 3^2$

Ans =

Rate Your Understanding: This will be helpful for your 8th Grade math teacher ☺

3 – Meets	2 – Refresher	1 – Need to Study
I have a complete understanding of the concept. No further action needed.	I can recall some of the concepts, but need a little refresher.	I forgot how to apply the concept and need to study this section.

Specific Lesson	Rating
Lesson 1: The Real Number System	
Lesson 2: Rational Number Operations	
Lesson 3: Algebraic Expressions	
Lesson 4: Algebraic Equations & Inequalities	
Lesson 5: Direct & Inverse Proportions	
Lesson 6: Angle Properties & Straight Lines	
Lesson 7: Circles, Volume, & Surface Area	
Lesson 8: Statistics	
Lesson 9: Probability	
Lesson 10: Order of Operations	

Lesson 11: Mixed Problems [Required only for students taking Algebra 1]

SHOW WORK! No work = No credit!

<p>If $a = -4$ and $b = \frac{4}{3}$, find the value of the expression below.</p> $\frac{1}{6}a^2 + \frac{9}{10}b$	<p>Simplify the expression below.</p> $\frac{5^3 - -19 + 2}{(5 + 2^2) \cdot 3}$
<p>Once simplified, which expression is not equivalent to the other three expressions?</p> <p>A. $4(7 - 2m) - 10$</p> <p>B. $-5m - 11 - 3m + 29$</p> <p>C. $m - (9m + 1) + 17$</p> <p>D. $12 + 4m - 3(4m - 2)$</p>	<p>Simplify, then completely factor the expression below.</p> $6(4y + 7) - 3(2y - 1)$ <p>A. $3(6y + 15)$</p> <p>B. $3(6y + 13)$</p> <p>C. $9(2y + 5)$</p> <p>D. $9(2y + 3)$</p>
<p>Find the solution to the equation below.</p> $2(4w - 3) = -2(2w + 15)$	<p>Translate and solve: "The difference between two-thirds of a number, n, and eleven is at least 17".</p>

Which of the following values is a solution to the inequality below?

$$7n + 8 > 9n + 14$$

- A. 1
- B. 2
- C. -3
- D. -4

The soccer team and the lacrosse team sold tubs of cookie dough as a fundraiser. Each tub sold earns \$5 in profit. If the soccer team sold thirteen less than twice the number of tubs that the lacrosse team sold, and the two teams sold 224 tubs combined, how much money did the soccer team raise?

- A. \$395
- B. \$440
- C. \$725
- D. \$855

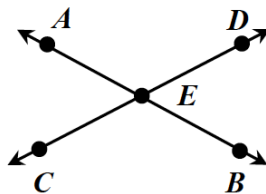
Ben is buying a book that costs \$14.75 and a magazine that costs \$5.25. If he has a store coupon for 15% off and sales tax is 8%, how much will he pay in total?

- A. 17.92
- B. 18.36
- C. 18.74
- D. 19.08

If $m\angle 1 = 61^\circ$, $m\angle 2 = 29^\circ$, $m\angle 3 = 151^\circ$, and $m\angle 4 = 29^\circ$, which statement could be true?

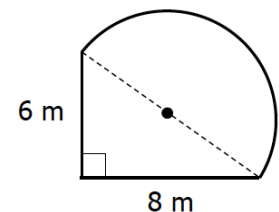
- A. $\angle 1$ and $\angle 2$ are vertical angles
- B. $\angle 2$ and $\angle 3$ are complementary angles
- C. $\angle 2$ and $\angle 4$ are complementary angles
- D. $\angle 3$ and $\angle 4$ are supplementary angles

Given the diagram below, if $m\angle AEC = (5x + 1)^\circ$ and $m\angle CEB = (9x - 3)^\circ$, find the value of x .



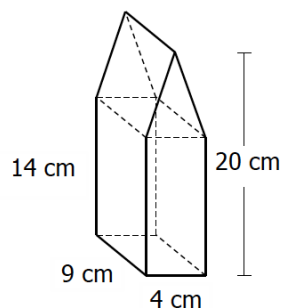
- A. $x = 1$
- B. $x = 7$
- C. $x = 9$
- D. $x = 13$

What is the perimeter of the shape shown below?



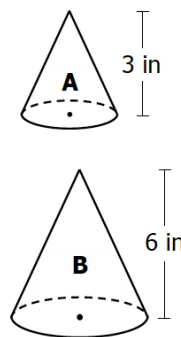
- A. $P = 29.7$ m
- B. $P = 36.0$ m
- C. $P = 45.4$ m
- D. $P = 58.0$ m

Find the total volume of the figure below.



- A. 598 cm^3
- B. 612 cm^3
- C. 674 cm^3
- D. 709 cm^3

Cone A and Cone B have the same radius. Which statement is true regarding the volume of Cone B compared to the volume of Cone A?



- A. It is two times larger.
- B. It is three times larger.
- C. It is four times larger.
- D. It is nine times larger.

Between which two consecutive numbers does the square root below lie?

$$-\sqrt{128}$$

- A. -13 and -12
- B. -12 and -11
- C. -11 and -10
- D. -10 and -9

Which value is an integer but not a whole number?

- A. 75%
- B. $5^{-1} \cdot 10$
- C. $\sqrt{20}$
- D. $-\frac{4^3}{16}$

Find the solution to the equation below.

$$5(2a - 3) = 13a - 3(a - 5)$$

- A. $a = -2$
- B. $a = 5$
- C. No Solution
- D. Infinite Solution

Which graph represents the solution to the inequality below?

$$-\frac{1}{2}(8a - 32) \leq -4$$

- A.
- B.
- C.
- D.