

CCSS	LGs:	Alignment <i>Aligned to which questions on the assessment</i>
	1.1 Algebra Patterns: Generalize and extend patterns and functions using tables, graphs, and number properties (e.g., number sequences, prime and composite numbers, recursive patterns like the Fibonacci numbers) OCCT-8%	1-2
NS.1	1.2 Expressions and Equations: Write algebraic expressions and simple equations that correspond to a given situation. OCCT- 8%	3-6
EE.2c	1.3 Use substitution to simplify and evaluate algebraic expressions (e.g., if $x = 5$ evaluate $3 - 5x$ ). Use order of operations (PEMDAS) to simplify and evaluate algebraic expressions. OCCT- 6%	7-8
EE.1-8	1.4. Write and solve one-step equations with one variable using number sense, the properties of operations, and the properties of equality (e.g., $1/3x=9$ ) OCCT- 4% EE.8: Inequalities	9-10
NS.5-7	2.1 Number Sense: Convert, compare, and order decimals, fractions, and percents using a variety of methods. OCCT- 10% NS.5-7: Integers and Rational Numbers	11-16
NS.1-3	2.2 Number Operations 2.2a Multiply and divide fractions and mixed numbers to solve problems using a variety of methods. 2.2b Multiply and divide decimals with one-or two-digit multipliers or divisors to solve problems. 2.2c Estimate and find solutions to single and multi-step problems using whole numbers, decimals, fractions, and percents (e.g., $7/8 + 8/9$ is about 2, $3.9 + 5.3$ is about 9) 2.2d Use basic operations on integers to solve problems. 2.2e Build and recognize models of multiples to develop the concept of exponents and simplify numerical expressions with exponents and parentheses using order of operations OCCT- 20%	17-26
G.4	3.1 Geometry: Three Dimensional Figures Compare and contrast by classifying and analyzing the basic characteristics of three-dimensional figures (Rectangular and triangular pyramids/prisms, spheres, cones, and cylinders). OCCT- 4%	27-28
G.2	3.2 Geometry: Three Dimensional Figures Compare and contrast congruent and similar figures. OCCT- 4%	29-31
G.3	3.3 Geometry: Three Dimensional Figures Identify the characteristics of the rectangular coordinate system and use them to locate points and describe shapes drawn in all four quadrants. OCCT- 8%	32-35
	4.1 Measurement: Circles Use formulas to find the circumference and area of circles in terms of pi. OCCT- 8%	36-37
G.1	4.2 Measurement: Conversions Convert, add, or subtract measurements within the same system to solve problems. (Limit to linear measure, weight, mass, time, perimeter, area, capacity, and volume. OCCT- 6%	38-40
SP.1-5	5.1 Data Analysis Organize, construct displays, and interpret data to solve problems (e.g. data from student experiments, tables, diagrams, charts, graphs).OCCT- 6%	41-44
SP.1-5	5.2 Data Analysis: Central Tendency Probability: Use the fundamental counting principle on sets with up to five items to determine the number of possible combinations. OCCT- 4%	45-47
RP.1-3	Rate and Ratio	48-50

**PASS Standard 1.1**

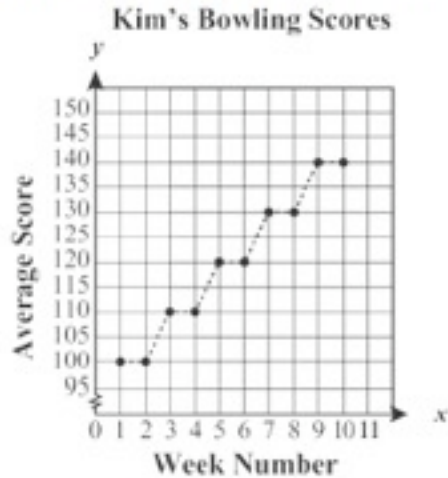
1) Mrs. Johnson asked her 6<sup>th</sup>-grade students to form a number pattern using these rules.

- Use the number 1 as the first term.
- To find the next term, double the previous term and add 2.

The first two numbers in the pattern are 1 and 4. What is the 4<sup>th</sup> number in the pattern?

- A) 20
- B) 22
- C) 44
- D) 46

2) The graph shows that Kim's mean bowling scores have formed a pattern for the last 10 weeks. Her mean has stayed the same for two weeks, and then increased by the same amount the next week.



If the pattern continues for the next two weeks, what will Kim's mean score be in week 12?

- A) 140
- B) 150
- C) 155
- D) 160

**PASS Standard 1.2**

3) Translate the following written verbal expression into an algebraic expression.

*Eight is the sum of half a number and the number.*

- A)  $8 = x/2 + x$
- B)  $x/2 = 8$
- C)  $\text{half} = x/8$
- D)  $8 + x = 1/2x$

4) James is the manager of a fast food hamburger stand. He started in 2010 and made a straight salary of \$28,000. James will receive a \$2,000 raise every year. Write an algebraic expression that represents James' salary per year and solve for the year 2020.

Algebraic Expression:

A) \$46,000

B) \$38,000

C) \$30,000

D) \$48,000

5) Sort each expression. Some expressions will NOT be used.

Equivalent to $8(t + 4)$	Equivalent to $8t + 4$

$(8 + t) + (8 + 4)$        $(8 \times t) + (8 \times 4)$        $8t + 12$   
 $4(2t + 1)$      $8t + 32$      $2(4t + 2)$      $4t + 4 + 4t$

6) Translate the following algebraic equation into a written verbal expression.

$$Y = 6 - (8 \cdot b)$$

A) Y is equal to six minus eight plus  $b$

B) Y is equal to six less than eight of  $b$

C) Y is equal to the difference between six and the quotient of eight and  $b$

D) Y is equal to six minus the product of eight and  $b$

**PASS Standard 1.3**

7) If  $x = 6$ , what is the value of this expression?

$$(2 + x)^2 \div 8$$

A) 1

B) 2

C) 5

D) 8

8) What is the value of this expression when  $b = 5$ ?

$$b + (b^2 \cdot 3) - 5$$

- A) 75
- B) 80
- C) 85
- D) 90

**PASS Standard 1.4**

9) Each of four friends ordered the same number of tacos at a drive-through window. The total order was for 32 soft tacos. Write an equation that shows this situation, where  $x$  is the number of soft tacos each friend will receive, and then solve for  $x$ .

- A)  $4 + x = 32$ ;  $x = 8$
- B)  $x / 32 = 10$
- C)  $4x = 32$ ,  $x = 8$
- D)  $4x = 32$ ,  $x = 10$

10) If  $1/10x = 60$ , what is the value of  $x$ ?

- A)  $10/6$
- B) 610
- C) 6
- D) 600

**PASS Standard 2.1**



11) Order the following percentages, ratios, and decimals from least to greatest.

- 14%      F.       $2/3$       G.       $1/5$       H.      I.      J.      .583

- A) J, H, G, F, I
- B) G, I, J, H, F
- C) H, J, G, I, F
- D) H, G, J, F, I

12) If Rachel is trying to order percentages, ratios, and decimals from least to greatest. Which ratio would come next in the sequence below?

$2/10$ , .47, 58%,

- A)  $3/10$

- B)  $\frac{2}{3}$
- C)  $\frac{8}{16}$
- D)  $\frac{4}{5}$

13) Which list is in order from least to greatest?

- A) (-1.5), 80%,  $\frac{1}{5}$
- B)  $\frac{1}{5}$ , (-1.5), 80%
- C) (-1.5),  $\frac{1}{5}$ , 80%
- D) 80%,  $\frac{1}{5}$  (-1.5)

14) Using the numbers below, make each true.

	>	
	<	
	=	

- |    |    |    |    |
|----|----|----|----|
| -2 | 6  | 7  | -3 |
| -5 | -6 | -7 | -7 |

15) A scientist measures the masses of some turtles using digital scales.

- Scale A measures to the nearest tenth of a gram
- Scale B measures to the nearest hundredth of a gram

Sort the actual masses of the turtles into the boxes to tell whether the two scales' readings will be the same or different.

Same Readings	Different Readings

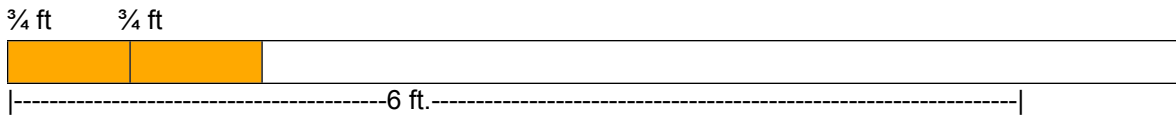
36.011 g	35.996 g	36.102 g
34.309 g	36.004 g	35.689 g

16) Roberto recorded the temperature outside his house below. Roberto claims the difference between the temperatures is 8 degrees. Explain why Robert is incorrect. What is the correct difference in temperatures?

Time	Temperature (°F)
4:00 pm	15

**PASS Standard 2.2**

17) Mrs. Johnson plans to cut a 6 foot board into pieces that are  $\frac{3}{4}$  feet long, as shown in this diagram.



How many pieces can she get from this board?

- A) 9 pieces
- B) 8 pieces
- C) 6 pieces
- D) 7 pieces

18) One summer in Bonnie's home state it rained 38 inches in  $4\frac{3}{4}$  days. What is the rate in inches of rain per day?

- A) 8 inches
- B) 16 inches
- C) 4 inches
- D) 12 inches

19) Roderick's car needed to be fixed. If every hour that a technician works on a car costs \$34.50 and a technician worked on Roderick's car for 8.9 hours, how much does Roderick spend fixing his car?

- A) \$302.60
- B) \$307.05
- C) \$586.50
- D) \$526.50

20) Justin's school ordered 967 pencils for the year. In April, the school had used 764 pencils. Which is closest to the percentage of pencils Justin's school used?

- A) 60%
- B) 50%
- C) 75%
- D) 90%

21) A group of hikers climbed from Salt Flats (elevation -55 feet) to Talon Bluff (elevation 620 feet). What is the difference in elevation between Talon Bluff and Salt Flats?

- A) 565 feet
- B) 575 feet
- C) 665 feet
- D) 675 feet

22) One morning, the temperature was 5° below zero Fahrenheit. By noon, the temperature rose 20° F and then dropped 8°F by evening. What was the evening temperature?

- A) 17° below zero
- B) 15° below zero
- C) 12° above zero
- D) 7° above zero

23) What is the value of this expression?

$$18 + 27 \div \left( \frac{9+6}{5} \right) + \frac{1}{2}$$

- A) 23
- B)  $21 \frac{1}{2}$
- C) 15
- D)  $5 \frac{1}{2}$

24) What is the value of this expression?

$$\frac{2/6 (9 \times 1/3)^2}{2^2}$$

- A) 3/8
- B) 4.5
- C) 3/4
- D) 6/6= 1

25) An equation is shown:

$$\frac{2}{3} \times \frac{\square}{\square} = n$$

Sarah claims that for any fraction multiplied by 2/3, n will always be less than 2/3. Create two fractions to either support Sarah's claim and a fraction that does not support Sarah's claim.

A. Supports Sarah's Claim




$$\frac{2}{3} \times \frac{\square}{\square} = n$$

B. Does not support Sarah's Claim

$$\frac{2}{3} \times \frac{\square}{\square} = n$$

26) The area and one dimension of a piece of land are given.

- $\frac{1}{2}$
- $\frac{1}{3}$
- $\frac{2}{3}$
- $\frac{2}{5}$
- $\frac{3}{4}$
- $\frac{3}{5}$
- $\frac{4}{5}$

 <b>mile</b>	<p>The area of a rectangular piece of land is <math>\frac{6}{10}</math> square mile. One dimension of this piece of land is <math>\frac{3}{4}</math> mile.</p>
 <b>mile</b>	<p>The area of a piece of land that is in the shape of a triangle is <math>\frac{1}{6}</math> square mile. One dimension of this piece of land is <math>\frac{2}{3}</math> mile.</p>
 <b>mile</b>	<p>The area of a rectangular piece of land is <math>\frac{4}{25}</math> square mile. One dimension of this piece of land is <math>\frac{2}{5}</math> mile.</p>

**PASS Standard 3.1**

27) Which set lists two three-dimensional figures that have rectangular bases?

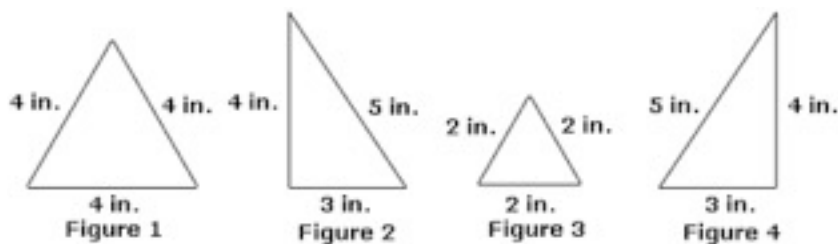
- A) Cube, Triangular Pyramid
- B) Triangular Pyramid, Rectangular Pyramid
- C) Rectangular Pyramid, Rectangular Sphere
- D) Triangular Prism, Cube

28) Which figure has exactly 12 edges?

- A) Cube
- B) Triangular Prism
- C) Rectangular Prism
- D) Rectangular Pyramid

**PASS Standard 3.2**

29) Identify the figures that are similar but not congruent.



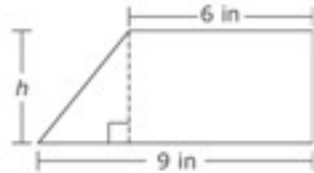
Figures are not drawn to scale

- A) Figure 1 and Figure 3
- B) Figure 1 and Figure 4
- C) Figure 2 and Figure 3
- D) Figure 3 and Figure 4



30)

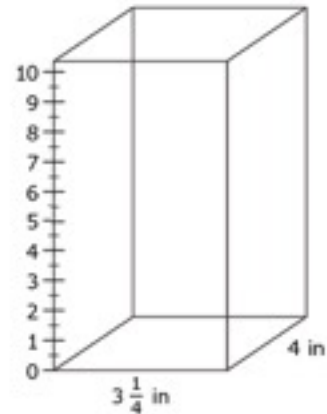
The trapezoid shown is divided into a right triangle and a rectangle.



Create an expression to find the area of the trapezoid.

31). Tana fills the prism shown with  $110 \frac{1}{2} \text{ in}^3$  of liquid. Select the appropriate height of the liquid in the prism.

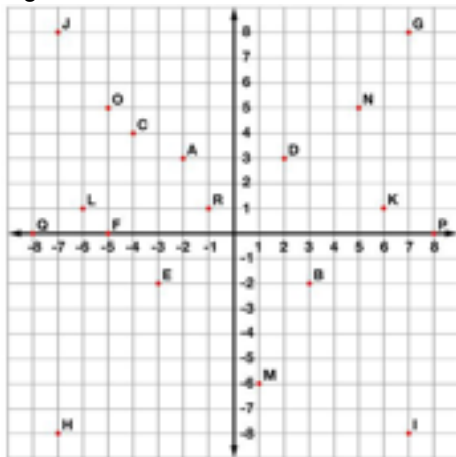
- a)  $3 \frac{1}{2}$  inches
- b) 5 inches
- c)  $8 \frac{1}{2}$  inches
- d) 10 inches



**PASS Standard 3.3**

Use Figure A to answer questions 32-33

Figure A



32) Jay wanted to see how close his desk was to Paul's desk. He made a map of the classroom, and plotted all the desks of his classmates. He forgot to properly label them. Which points represent the location of Jay and Paul's desks?

Student	Location of Desk
Jay	(8, 0)
Paul	(7, -8)

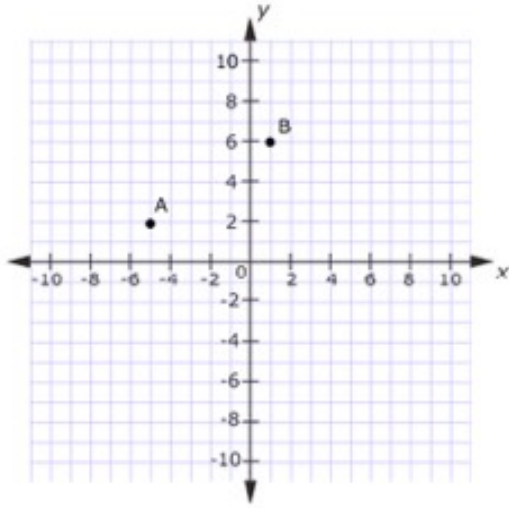
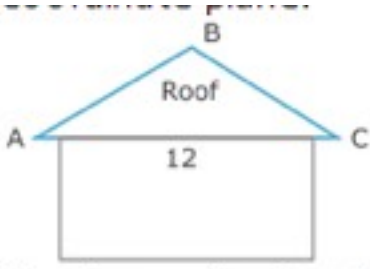
- A) P and R
- B) Q and I
- C) P and I
- D) Q and J

H

33) Which point shows the ordered pair (-7, -8)? Which quadrant is this point located in?

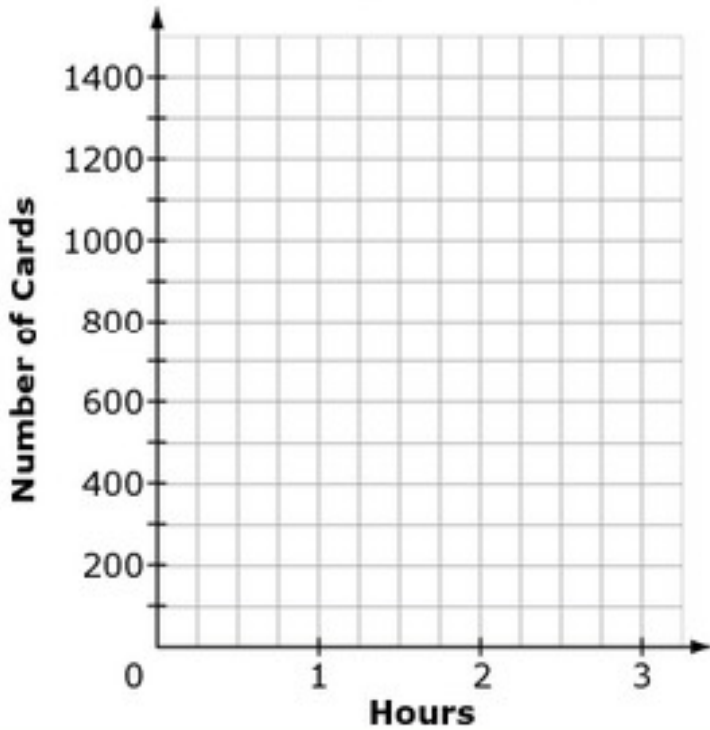
- A) H, II
- B) J, IV
- C) J, III
- D) H, III

34) Jose is transferring this drawing of a triangular roof to a coordinate plan. He plots point A at (-5, 2) and point B at (1,6). The length of the bass of the roof is 12 units in length. What are the coordinates for point C?



35) A greeting card company prints 350 cards each hour. Draw the points and label them for hours 2 and 3.

**Greeting Card Graph**

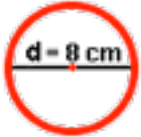


**PASS Standard 4.1**

36) If the circumference of a pool is 12meters, what is the area of the pool?

- A) 6 meters
- B) 12 meters
- C) 36 meters
- D) 12 meters

37) Use the image below to determine the area and circumference in terms of pi.



- A)  $16 \text{ cm}^2$ , 8cm
- B)  $64 \text{ cm}^2$ , 16 cm
- C)  $8 \text{ cm}^2$ , 16cm
- D)  $16 \text{ cm}^2$ , 6cm

**PASS Standard 4.2**

38) A square playground has a perimeter of 120 yds<sup>2</sup>. What is the area of the playground in feet<sup>2</sup>?

- A) 1,4440 ft<sup>2</sup>
- B) 900 ft<sup>2</sup>
- C) 480 ft<sup>2</sup>
- D) 100 ft<sup>2</sup>

39) A prism has a volume of 18,000 mm<sup>3</sup>, what is the volume of the prism in cubic centimeters?

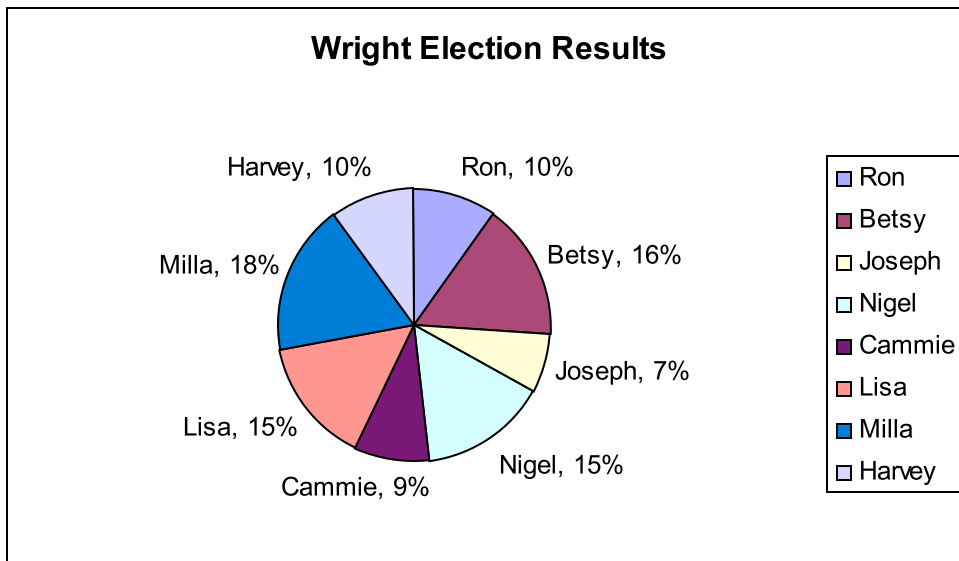
- A) 1.8 cm<sup>3</sup>
- B) 18 cm<sup>3</sup>
- C) 1,800 cm<sup>3</sup>
- D) 180 cm<sup>3</sup>

40) The average baby mass is 4.3 kgs. Brynn's newborn baby is 1000 grams less than the average baby mass. What is the mass of Brynn's baby?

- A) 3.3 kg
- B) 330 grams
- C) 4.2 kg
- D) 3.3 grams

**PASS Standard 5.1**

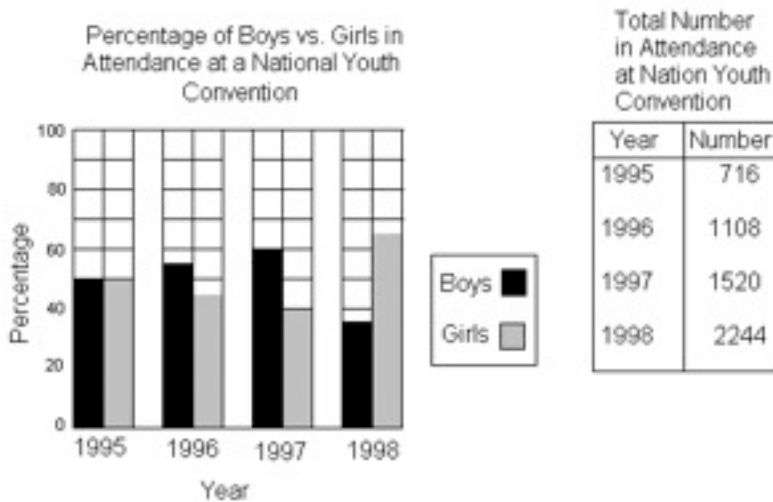
41)



The circle graph above shows the results of the 6<sup>th</sup> grade student body president elections at Wright Middle School. If 300 students voted, how many more students voted for Lisa than for Harvey?

- A) 12
- B) 24
- C) 15
- D) 75

42) How many boys attended the 1995 convention?



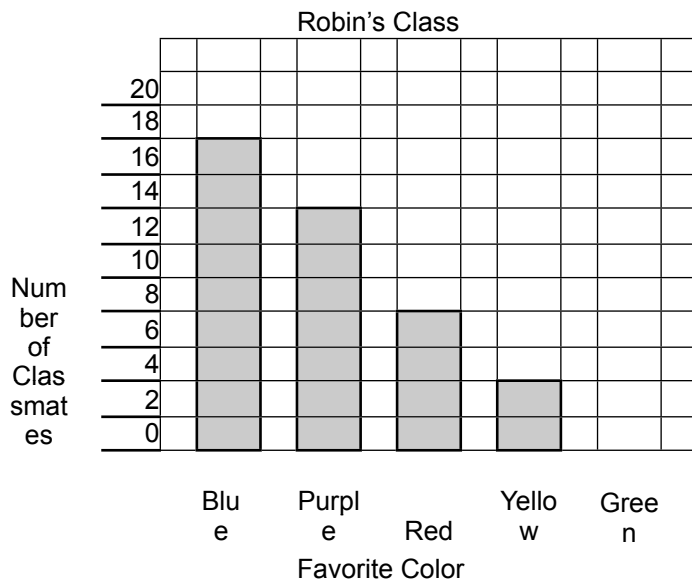
- A) 358
- B) 390
- C) 407
- D) 540

43) Robin asked 50 classmates to name their favorite color and gathered the following information.

Favorite Color	Blue	Purple	Red	Yellow	Green
----------------	------	--------	-----	--------	-------

Number of Classmates	18	14	8	4	?
----------------------	----	----	---	---	---

Robin decided to display the information in a bar graph on graph paper as shown below. If the bar labeled *blue* is 9 blocks tall, how many blocks tall should the bar labeled *green* be?



- A) 2
- B) 4
- C) 2.5
- D) 3

44) Malik is buying a Snack Pack at a movie theater, which consists of a popcorn, candy, and drink. He can choose small, medium, or large popcorn, a regular or king size candy, and a small, medium, large, or jumbo drink. How many different Snack Pack combinations can Malik choose from?

- A) 9
- B) 24
- C) 12
- D) 64

**PASS Standard 5.2**

45) The chart below shows the football scores for the Jets this season.

<b>Game</b>	1	2	3	4	5	6	7	8	9	10
<b>Jets</b>	10	10	13	21	10	14	10	42	28	12
<b>Opponent</b>	7	3	17	24	14	0	3	21	27	28

Decide which measure of central tendency would show the most typical score for the Jets' season and solve for the answer?

- A) Mean, 17
- B) Mode, 10
- C) Mode, 17
- D) Median, 10

46) Jo was excited to show her mom her first math test. Her teacher graded and returned the test and figured Jo's mastery for each learning goal.

5.1	5.1a	5.2	5.3	5.3a
76%	82%	76%	90%	50%

Find the mean, median, mode, and range for Jo's mastery on the first math test.

47) Several questions are show. Which question expects variability in the data related to it? Label each one V for variability and NV for no variability in the data.

How old is the athlete?

How many pets does each 6th grader have?

How many 6th graders attend our school?

How old are the animals at the zoo?

How many baseball cards does the boy have?

**Rates/Ratios**

48) Kate waters the garden every 3 days and weeds it every 4 days. She does both on April 2nd. What is the next date that she will both water and weed her garden?

APRIL						
Sun	Mon	Tues	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

- 49) A landscape designer is planning the layout of trees in a park.
- There are two types of trees: elm and pine
  - There should be at least 16 total trees but no more than 30



- The ratio of elm trees to pine trees will be 3:2
- How many of each type of tree will the landscape designer use?

50) An artist is using red, blue, and green tiles to create a mosaic.

- The ratio of red tiles to total tiles should be 2:5
- For every 3 tiles, there should be one green tile.

How many of each tile will the artist use?



Answer Document

QUESTION	ANSWER	QUESTION	ANSWER										
1	B	26	A) 4/5 B) 1/2 C) 2/5										
2	B	27	D										
3	A	28	A										
4	D Algebraic Expression: S= \$28,000 + 10(\$2,000)	29	A										
5	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Equivalent to <math>8(t + 4)</math></th> <th>Equivalent to <math>8t + 4</math></th> </tr> </thead> <tbody> <tr> <td><math>8t + 32</math></td> <td><math>4(2t + 1)</math></td> </tr> <tr> <td><span style="border: 1px solid blue; padding: 2px;"><math>(8 \times t) + (8 \times 4)</math></span></td> <td><math>2(4t + 2)</math></td> </tr> <tr> <td></td> <td><math>4t + 4 + 4t</math></td> </tr> </tbody> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid gray; padding: 2px;"><math>(8 + t) + (8 + 4)</math></td> <td style="border: 1px solid gray; padding: 2px;"><math>8t + 12</math></td> </tr> </table>	Equivalent to $8(t + 4)$	Equivalent to $8t + 4$	$8t + 32$	$4(2t + 1)$	<span style="border: 1px solid blue; padding: 2px;"><math>(8 \times t) + (8 \times 4)</math></span>	$2(4t + 2)$		$4t + 4 + 4t$	$(8 + t) + (8 + 4)$	$8t + 12$	30	$2h+9$
Equivalent to $8(t + 4)$	Equivalent to $8t + 4$												
$8t + 32$	$4(2t + 1)$												
<span style="border: 1px solid blue; padding: 2px;"><math>(8 \times t) + (8 \times 4)</math></span>	$2(4t + 2)$												
	$4t + 4 + 4t$												
$(8 + t) + (8 + 4)$	$8t + 12$												
6	C	31	C										
7	D	32	C										
8	A	33	D										
9	C	34	(7, 2)										
10	D	35	(2, 700); (3, 1050)										
11	C	36	C										
12	B	37	A										
13	B	38	D										
14	Various answers	39	C										
15	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Same Readings</th> <th>Different Readings</th> </tr> </thead> <tbody> <tr> <td></td> <td>34.309 g</td> </tr> <tr> <td>36.102 g</td> <td>35.689 g</td> </tr> <tr> <td>36.004 g</td> <td>36.011 g</td> </tr> <tr> <td><span style="border: 1px solid blue; padding: 2px;">35.996 g</span></td> <td></td> </tr> </tbody> </table>	Same Readings	Different Readings		34.309 g	36.102 g	35.689 g	36.004 g	36.011 g	<span style="border: 1px solid blue; padding: 2px;">35.996 g</span>		40	A
Same Readings	Different Readings												
	34.309 g												
36.102 g	35.689 g												
36.004 g	36.011 g												
<span style="border: 1px solid blue; padding: 2px;">35.996 g</span>													
16	Roberto is incorrect because he didn't take into account the negative number. The real difference is 22 degrees	41	C										
17	B	42	A										
18	A	43	D										



19	B	44	B
20	C	45	B
21	D	46	Mean – 74.8%; Median – 76%; Mode – 76%; Range – 40%
22	D	47	D
23	B	48	April 14
24	C	49	12 Elm; 8 pine
25	Various answers	50	6 red, 10 blue, 5 green