

PRAXIS CORE 5733 PRACTICE MATERIALS



I. Number and Quantity ~20 Questions 36% of Exam

- Solve problems involving integers, decimals, and fractions
 - 7 EE B 3
- Solve problems involving ratios and proportions
 - 7 RP A 3
- Solve problems involving percent
 - 7 RP A 3
- Solve problems involving constant rates (e.g., miles per hour, gallons per mile, cubic feet per minute)
 - 7 RP A 1
- Demonstrate an understanding of place value, naming of decimal numbers, and ordering of numbers
 - 5 NBT A
- Demonstrate an understanding of the properties of whole numbers (e.g., factors, multiples, even and odd numbers, prime numbers, divisibility)
 - 4 OA A,B,C
- Identify counterexamples to statements using basic arithmetic
 - Part of number and quantity—no specific standard
- Solve real-life problems by identifying relevant numbers, information, or operations (including rounding)
 - 4 MD A
- Solve problems involving units, including unit conversion and measurements
 - 4 MD A

ADDITIONAL TOPICS FOR NUMBER AND QUANTITY:

- Place value.
- Commutative, associative, and distributive properties of numbers.
- Ratio and proportion: language, notation, difference between the two, real-world problems, problems involving ratios of 2 or 3 quantities.
- Relationships among fractions, decimals, per cents.
- Represent and use multiple representations among fractions, decimals, per cents, and integers.
- All operations with fractions and decimals.
- Constant rates of change.
- Relationships involving prime and composite numbers.
- GCD and LCM.
- Sort positive and negative integers and numbers in fraction or decimal form in increasing order and place them on a number line.
- Approximation of pi.
- Operations with simple square roots, e.g. $\sqrt{5}$, $\sqrt{20}$, $\frac{\sqrt{50}}{2}$
- Operations with numbers that have integer exponents.
- Conversion of units, within and between, metric and U.S. standard.
- Counterexamples.
- Venn diagrams.
- Estimation and scaling.

1. Which number in the list is the greatest: $\frac{3}{5}$ 6% 0.611 6.1×10^{-2} ?
- a. $\frac{3}{5}$
 - b. 6%
 - c. 0.611
 - d. 6.1×10^{-2}

2. In the sequence of numbers below, 8 is the first number and every number after is 4 fewer than 2 times the preceding number. Find the next number in the list.

8, 12, 20, 36, ...

- a. 68
 - b. 76
 - c. 80
 - d. 142
3. If $15x$ is between 11 and 12, which of the following could be a value of x ?
- a. $\frac{7}{8}$
 - b. $\frac{7}{9}$
 - c. $\frac{7}{10}$
 - d. $\frac{7}{11}$

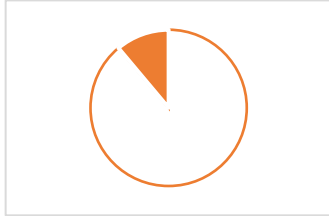
4. Derek is purchasing lunch meat to make sandwiches for the class picnic. He knows that 300 people are attending the picnic. Derek estimates that for every 10 people at the picnic, 11 sandwiches are needed, and that 20 pounds of meat will make 90 sandwiches. How much lunch meat should Derek buy?

- a. $73\frac{1}{3}$ pounds
 - b. $67\frac{2}{3}$ pounds
 - c. 110 pounds
 - d. 330 pounds
5. A can of paint will cover 800 square feet. A painter is hired to paint 6 rooms. Each room has a surface area of 2,100 square feet. What is the fewest number of buckets of paint that must be used to paint all 6 rooms?
- a. 16 cans
 - b. 17 cans
 - c. 18 cans
 - d. 120 cans

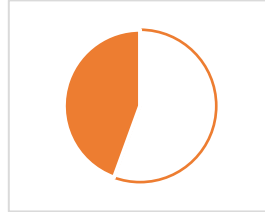
6. When 6,327.59 is divided by 100, which digit of the resulting number is in the tenths' place?
- a. 2
 - b. 5
 - c. 7
 - d. 9
7. The ratio of males to females in a school's eighth grade class is 5:6. If there are 132 students in the eighth-grade class, how many males are in the class?
- a. 12
 - b. 22
 - c. 24
 - d. 60
8. Which value correctly satisfies this statement: $\frac{2}{3} < \boxed{?} < \frac{7}{9}$?
- a. $\frac{1}{3}$
 - b. $\frac{1}{5}$
 - c. $\frac{1}{2}$
 - d. $\frac{7}{10}$
9. A bug travels 8.5 inches in 45 seconds. How far will it travel in 5 minutes?
- a. 42.5 inches
 - b. 56.7 inches
 - c. 75.2 inches
 - d. 90.0 inches
10. A container holds 26.5 gallons of orange juice. How many one-quart containers will this fill?
- a. 106 containers
 - b. 100 containers
 - c. 53 containers
 - d. 30.5 containers

11. There are 45 students in a mathematics class, and 15 of them participate in the Math Club. Which of the shaded areas in the charts below represents the percentage of students who participate in the Math Club?

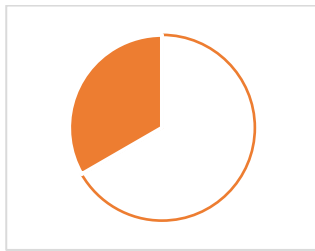
a.



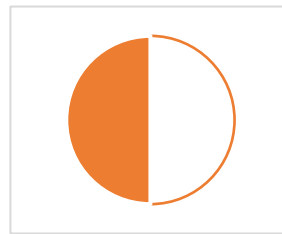
c.



b.



d.



12. A car costs \$25,000 plus \$675.00 for title and tax fees. Frances pays \$2,500.00 as a down payment and takes out a three-year loan at 4% interest. What are her monthly payments?

- a. \$650.00
- b. \$669.50
- c. \$721.00
- d. \$722.50

13. The table gives the number of cars sold at a dealership from 2002-2006. What was the percent increase in sales from 2004 to 2005?

Year	Number of Cars Sold
2002	1430
2003	1300
2004	1580
2005	1817
2006	1900

- a. 15%
- b. 18%
- c. 28%
- d. 32%

14. At a breakfast buffet, 93 people chose coffee, 47 chose juice, and 25 people chose to have both. Each person at the buffet chose at least one beverage. How many people visited the buffet?

15. 2.5 meters is how many kilometers?

- a. 0.0025 km.
- b. 0.25 km.
- c. 2,500 km.
- d. none of the above

16. Scientific notation for a number is 16.2×10^{-3} . What is the standard form?

- a. 0.000162
- b. 0.0162
- c. 0.0486
- d. 4.860

17. The table shows the percentage of categories chosen, in terms of national origin of food, as favorites in a poll of club members. If 500 members were polled, how many more chose Mexican than Greek and Japanese combined?

Favorite Food	% Chosen
Italian	17
Mexican	24
Indian	5
Greek	8
Chinese	17
Japanese	14
Other	15

- a. 4
- b. 10
- c. 24
- d. 120

18. On a test, students were asked to supply an expression equivalent to the ratio 8:6. Which of the following students is/are correct?

Student A: 4/3 Student B: 6:8 Student C: 3/2 Student D: 8/6

- a. Student B
- b. Student D
- c. Students A and D
- d. Students A, B, and D

19. Jamal plans a bike trip of 840 miles. He averages 160 miles per day. On what day does he arrive at his destination?

- a. 4th day
- b. 5th day
- c. 6th day
- d. 7th day

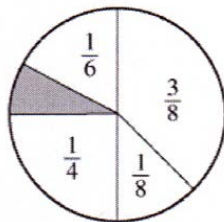
20. Which number is a counterexample to the statement that odd three-digit numbers are always prime?

- a. 101
- b. 113
- c. 129
- d. 137

21. A carper installer can install carpet at a rate of 12 yd²/hr. Approximately how long will it take her to install carpet in a 18.5 ft x 20 ft room and a 10 ft x 17 ft hall?

- a. 4.00 hours
- b. 5.00 hours
- c. 6.00 hours
- d. 6.50 hours

22. The circular region shown below is divided into five sectors. Four of the sectors are labeled with the fraction of the circle that the sector represents. What fraction is represented by the shaded sector?



- a. 5/12
- b. 3/16
- c. 1/12
- d. 1/24

23. In a recipe for making large cookies, $\frac{2}{5}$ of a cup of flour is needed for each cookie. If only $4\frac{4}{5}$ cups of flour are available, what is the maximum number of cookies that can be made?

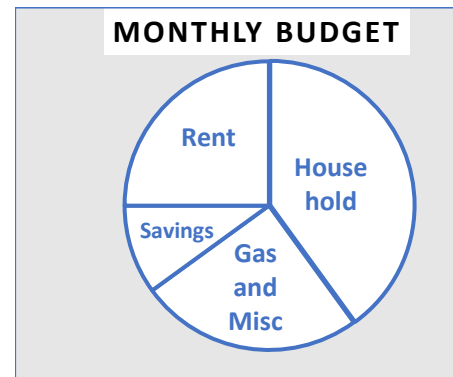
cookies

24. $\frac{2}{9}$ is less than which of these?

- a. $\frac{1}{7}$
- b. $\frac{4}{19}$
- c. $\frac{1}{5}$
- d. $\frac{2}{11}$
- e. $\frac{3}{8}$

25. If you have \$5,200 budgeted for the month, according to the budget shown, approximately how much will you spend on rent?

- a. \$520
- b. \$1300
- c. \$2080
- d. \$2600



SOLUTIONS: Number and Quantity

1. c
2. a
3. b
4. a
5. a
6. a
7. d
8. d
9. b
10. a
11. b
12. c
13. a
14. 115 people
15. a
16. b
17. b
18. c
19. c
20. c
21. b
22. c
23. 12 cookies
24. e
25. b

**II Data Interpretation and Representation,
Statistics, and Probability ~18 Questions 32% of Exam**






- Work with data and data representations to solve problems
 - 3 MD B and S-ID A B
- Solve problems involving measures of central tendency (e.g., mean, median) and spread (e.g., range, standard deviation)
 - 6 SP B 5c
- Use data from a random sample to draw inferences about characteristics of a population
 - 7 SP A and S-IC
- Identify positive and negative linear relationships in scatterplots
 - 8 SP A 1
- Use a linear model for a data set to make predictions
 - 8 SP B 3
- Differentiate between correlation and causation
 - S-ID C 9
- Compute simple probabilities, and use probabilities to solve problems
 - 7 SP C



ADDITIONAL TOPICS FOR DATA INTERPRETATION AND REPRESENTATION, STATISTICS, AND PROBABILITY:


- Recognize the effect on mean, median, mode of a data set by adding a constant to all data or multiplying all data by a positive constant.
- Choose an appropriate graph based on a given set of data.
- Interpret diagrams of data sets (tables, charts, histograms, line-graphs, bar graphs, circle graphs, scatterplots, stem-and-leaf plots, pictographs, number lines, boxplots).
- Use counting techniques.
- Interpret a line of best fit for a given context.
- Compute probabilities of independent events.
- Justify conclusions about correlation or causation.
- Identify outliers.

1. What is the range of all integers greater than 40 and less than 99 that are multiples of 3 ?

- A. 54
- B. 56
- C. 57
- D. 59
- E. 60

Salesperson	Number of Cars Sold
I	
II	
III	
IV	
V	

Each  represents half the number of cars represented by .

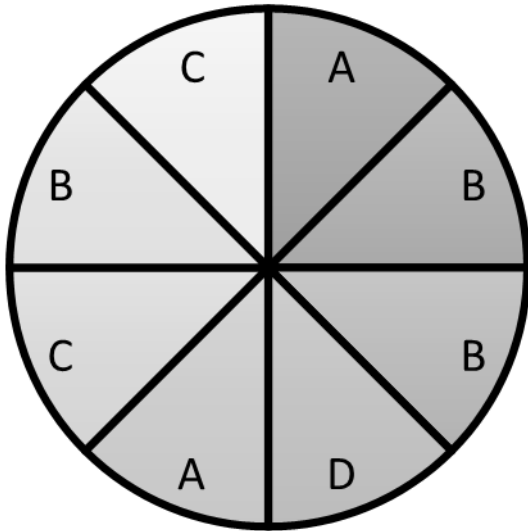
2. During a 5-day sale at a certain car dealership, 5 salespeople sold a total of 140 cars. The pictograph above represents the number of cars sold by each salesperson. How many cars does each  represent?

- A. 6
- B. 8
- C. 10
- D. 12
- E. 14

3. Results from a survey conducted in a certain grocery store showed that 3 out of 5 people preferred crispy-flakes cereal to crunchy-flakes cereal. Based on this survey, if a total of 2,500 customers bought one of these two cereals, how many most likely purchased crunchy-flakes cereal?

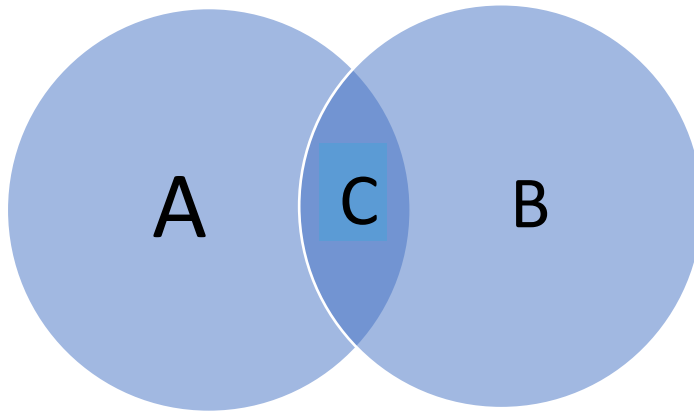
- A. 1,000
- B. 1,300
- C. 1,500
- D. 1,600
- E. 2,000

4. What is the probability of the spinner shown below stopping on the letter C?

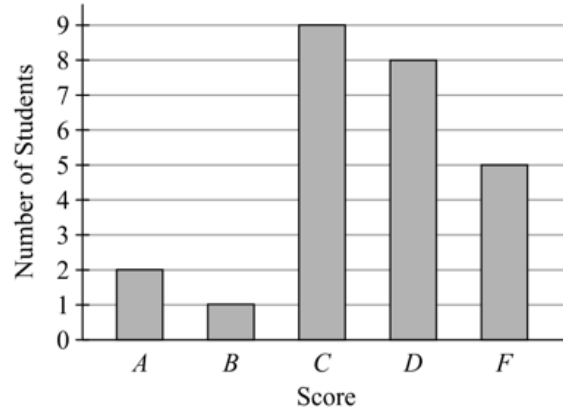


- A. $\frac{1}{8}$
- B. $\frac{1}{4}$
- C. $\frac{3}{4}$
- D. 2

5. In the Venn Diagram below, circle A represents the integers from 3 to 13 inclusive, and circle B represents the integers from 5 to 15 inclusive. How many integers are represented in region C of the diagram?



- A. 2
- B. 8
- C. 9
- D. 10



6. The figure above shows the frequency distribution of the letter grades received by the students in a class for a recent test. What fraction of the students in the class scored either a *B* or a *C* ?

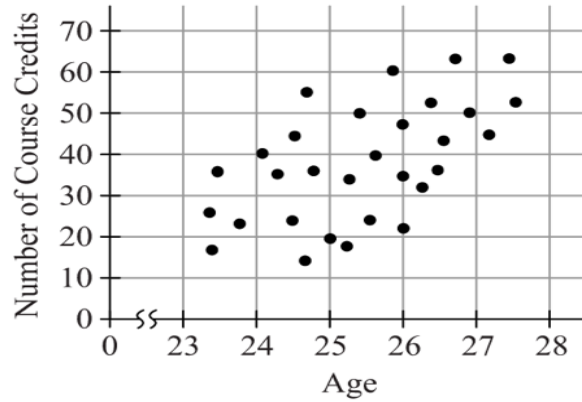
- A. $2/25$
- B. $1/5$
- C. $8/25$
- D. $9/25$
- E. $2/5$

7. In a parking lot there are only white cars, green cars, and red cars. If one car is selected at random from the lot, the probability that the selected car would be a green car is $1/6$, and the probability that it would be a red car is $1/8$. What is the probability that it would be a white car?

- A. $1/7$
- B. $7/12$
- C. $2/3$
- D. $17/24$
- E. $5/6$

8. There are 10 cars in a parking lot. Nine of the cars are 2,3,4,5,6,7,8,9, and 10 years old. If the average age of the cars is 6 years old, how old is the 10th car?

- A. 3 years old
- B. 4 years old
- C. 5 years old
- D. 6 years old



9. In the scatterplot above, each point represents the age, in years, and number of completed course credits for a group of 30 graduate students at a certain university. Of the students who have fewer than 40 completed course credits, what fraction are older than 24?

Give your answer as a fraction. —

10. Which of the following can have more than one value for a given set of data?

- A. Median
- B. Mode
- C. Mean
- D. None of the above

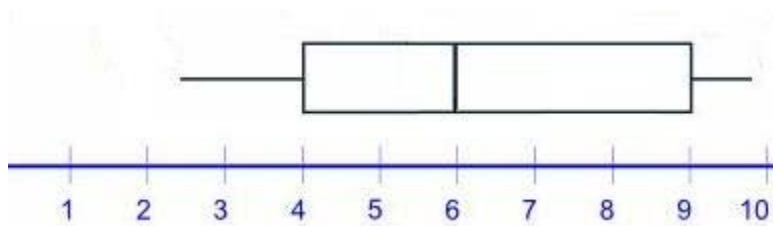
11. Mary goes to High School at Chilton High. School hours are 7:30A - 3P. Mary goes to lunch at 11A. At random there is a fire drill during the day, what would the probability be that the fire drill will begin before lunch?

- A. 46.7%
- B. 4.67%
- C. 47%
- D. 46%

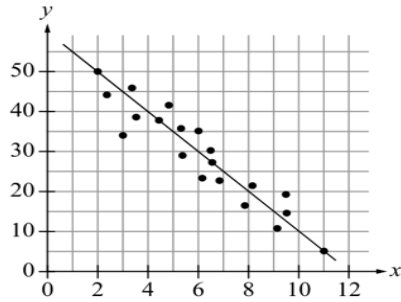
12. Calls to a certain local rescue squad are categorized as accident, fire, medical, and other. Of the 240 calls last month, $\frac{1}{8}$ of the calls were categorized as accident, $\frac{1}{2}$ of the calls were fire, $\frac{1}{4}$ of the calls were medical, and the remaining calls were other. Which of the following bar graphs best represents last month's calls?



13. What is the IQR for the boxplot shown below?



- A. 2
- B. 3
- C. 5
- D. 7.5



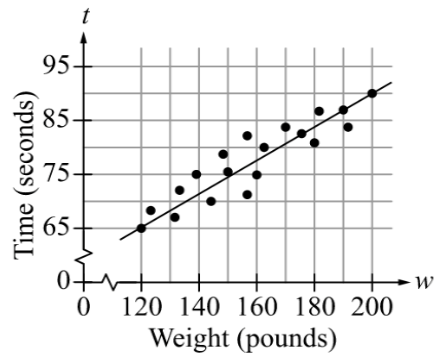
14. The scatterplot above shows 20 data points as well as a line of best fit for the data. Which of the following is the equation of the line of best fit?

- A. $y=140-9x$
- B. $y=100-8x$
- C. $y=60-5x$
- D. $y=43+x$
- E. $y=56+6x$

Response	Number of Responses
Yes	340
No	98
No Comment	62

15. To find out how popular a particular television show is, a random sample of 500 viewers of the show's first episode was asked, "Are you likely to watch this show again?" Based on the responses shown in the table above, approximately how many viewers in the estimated television audience of 1.2 million who watched the first episode are likely to watch the show again?

- A. 750,000
- B. 794,000
- C. 816,000
- D. 828,000
- E. 845,000



16. Nineteen people ran 400 meters. Each point on the scatterplot above represents a person's time (in seconds) to complete the run and the weight (in pounds) of that person. The scatterplot also shows a line of best fit for the data. According to the graph, each increase of 8 pounds in a runner's weight tends to increase the runner's time by approximately how many seconds?

- A. 2.0
- B. 2.5
- C. 3.0
- D. 3.5
- E. 4.0

17. A fair die is rolled and a fair coin is tossed. What is the probability that the die shows an even number and the coin shows tails?

- A. $\frac{1}{2}$
- B. $\frac{1}{4}$
- C. $\frac{1}{6}$
- D. $\frac{1}{12}$

18. A mathematics teacher determines that the median score for the most recent test was 80 percent. Which of the following is the most accurate interpretation of the result?













- A. Half the students scored below 80 percent
- B. The average score on the test was 80 percent.
- C. The most common score on the test is 80 percent.
- D. The highest score on the test was 80 percent.

19. A gym trunk contains 60 balls. 15 of these are soccer balls and the rest are a mixture of volleyballs and basketballs. If one ball is taken at random, the probability of drawing a basketball is $\frac{4}{15}$. How many of the balls are volleyballs?

- A. 15
- B. 16
- C. 29
- D. 31

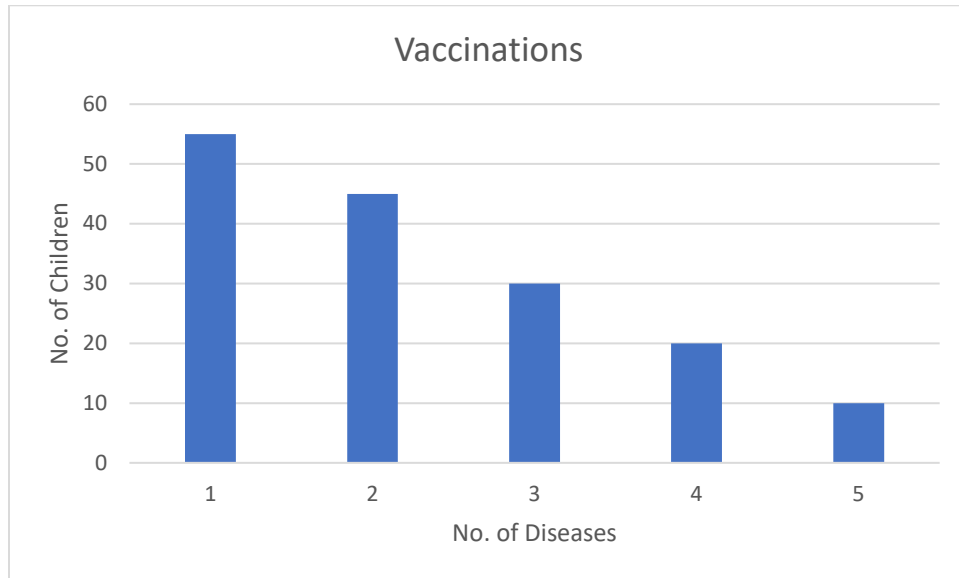
20. The pictograph below shows the results of a customer satisfaction survey by region. Each of the four regions has one salesperson. Salespeople each receive bonuses based on the amount of positive feedback they receive. If the salespeople from all four regions received \$540.00 in bonuses in total, how much bonus money does the company pay each individual salesperson per satisfied customer?

Each  represents feedback from 10 customers.

Region 1	   
Region 2	  
Region 3	 
Region 4	  

- A. \$4.00
- B. \$4.50
- C. \$5.00
- D. \$5.40

21. In Metric Elementary School, parents are advised to have their children vaccinated against 5 childhood diseases. According to the chart below, how many children were vaccinated against at least three diseases?



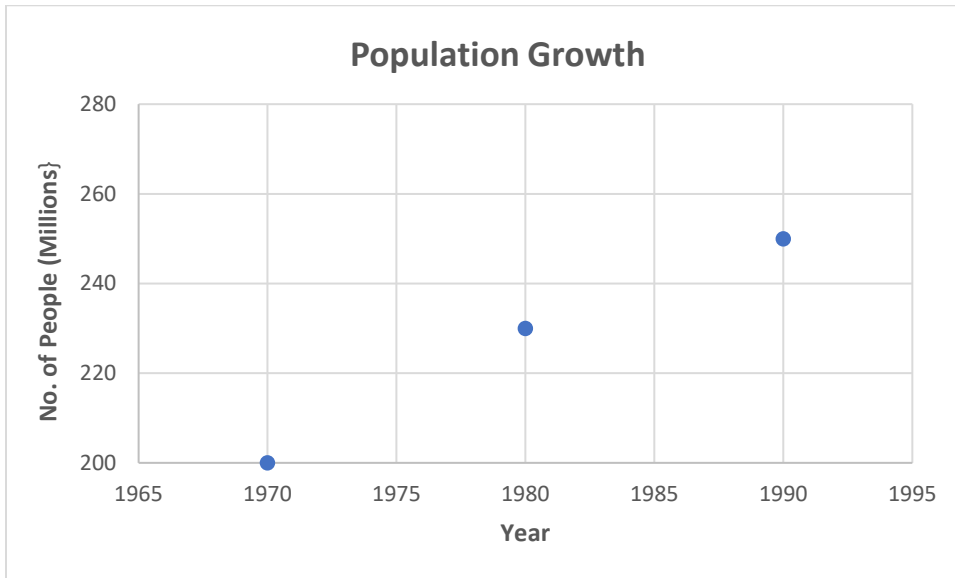
- A. 30
- B. 50
- C. 60
- D. 130

22. Suppose a study of speeding violations and drivers who use cell phones produced the following fictional data:

	Speeding Violations in the Last Year	No Speeding Violations in the Last Year
Car Cell Phone User	25	280
Not a Car Cell Phone User	45	405

Find the probability that a person chosen at random is a car cell phone user or had no speeding violations in the last year. Express your answer as a percent.

23. The graph below shows the approximate population of the U.S. from 1970-1990. Assuming the growth continued in the same manner, what would be a reasonable estimate for the population of the U.S. in 2010? Note that the axes do not start at zero.



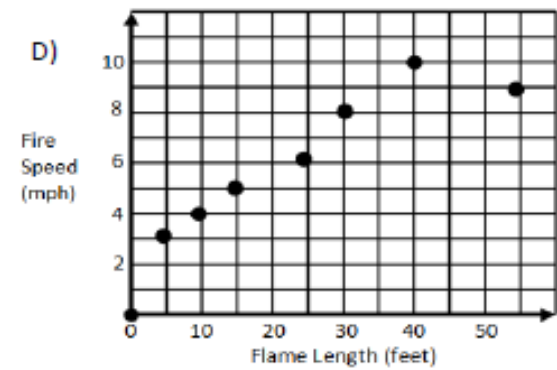
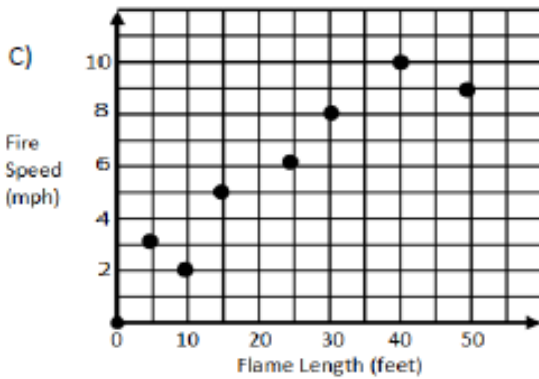
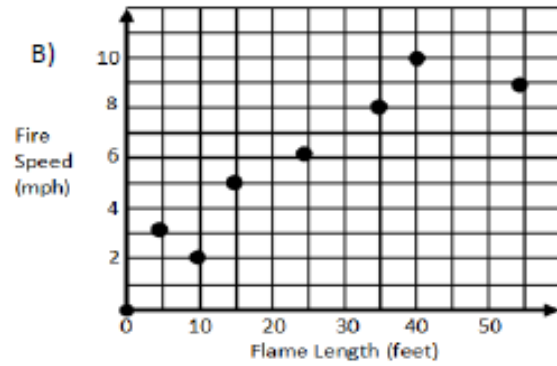
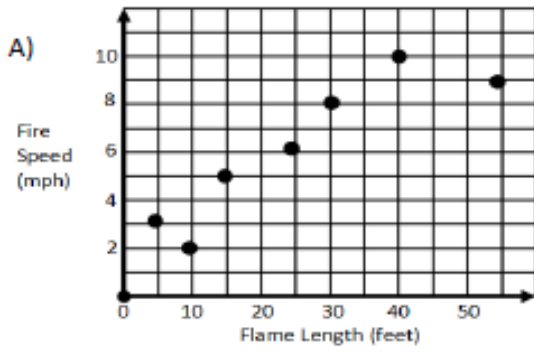
- A. 250 million people
- B. 260 million people
- C. 270 million people
- D. 290 million people

24. There are 3 red, 1 blue and 2 yellow marbles in a bag. Once a marble is selected it is replaced. Find the probability of selecting three red marbles in three tries.

- A. $1/5$
- B. $1/20$
- C. $1/15$
- D. $1/8$

25. Which scatter plot best represents the data given in the table?

Flame Length	Fire Speed (mph)
10	2
40	10
15	5
5	3
55	9
30	8
25	6



SOLUTIONS: DATA AND STATISTICS

1. A
2. B
3. A
4. B
5. C
6. E
7. D
8. D
9. $7/16$
10. B
11. A
12. A
13. C
14. C
15. C
16. B
17. B
18. A
19. C
20. B
21. C
22. 94%
23. D
24. D
25. A

III Algebra and Geometry ~18 Questions 32% of Exam**ALGEBRA**

- Demonstrate an understanding of the properties (commutative, associative, and distributive) of the basic operations (addition, subtraction, multiplication, and division) without needing to know the names of the properties
 - 3 OA B and 7 NS A
- Demonstrate the ability to follow an arithmetic or algebraic procedure (e.g., using a step-by-step procedure, using a simple flowchart, applying a simple recurrence sequence) by carrying it out or analyzing it
 - F-BF A 1a
- Use properties of operations to identify or generate equivalent algebraic expressions (e.g., multiplication of whole numbers gives the same result as repeated addition, multiplication by 0.1 gives the same result as division by 10)
 - 7 EE A
- Write an equation or expression that models a real-life or mathematical problem
 - 5 OA A and 7 NS A 3
- Solve word problems, including problems involving linear relationships and problems that can be represented by Venn diagrams
 - 8 SP A 3; part of probability and statistics
- Solve linear equations in one variable algebraically
 - 8 EE C 7
- Solve simple quadratic equations (e.g., $x^2 = 49$)
 - A-REI Bb

GEOMETRY

- Utilize basic properties of common two-dimensional shapes to solve problems
 - 5 G B
- Utilize facts about angles to solve problems
 - 7 G B 5
- Utilize facts about congruency and similarity of geometric figures to solve problems
 - 8 G A 2,4
- Use the formulas for the area and circumference of a circle to solve problems
 - 7 G B 4
- Use the formulas for the perimeter and area of a triangle and a rectangle and the formula for the volume of a rectangular prism (box) to solve problems
 - 5 MD C 5 b,c

DISCUSSION AREAS FOR ALGEBRA AND GEOMETRY:

- Difference between an algebraic expression and an algebraic equation.
- Find x in terms of y in a given problem.
- Demonstrate the similarities between operations with real numbers and with algebraic representations.
- Describe common mistakes students make applying the order of operations.
- Simplify algebraic expressions, e.g. $2(x + 1) - 3(x - 2)$ or $\frac{2x^2}{6x}$.
- Plot a line in the xy plane, e.g. $2x + 3y = 4$.
- Determine slope of a line.
- Given the equation of a line, find another line with the same slope.
- Explain slope using tables, graphs, linear equations.
- Find the intercepts of a line.
- Given a linear equation, write steps needed to solve the equation, e.g.

$$\frac{1}{3}x + 1\frac{2}{3}x = \frac{5}{6}$$
- Solve simple quadratic equations.
- Plot the solution set to an equation or inequality on the number line.
- Given two points, find the equation of a line in slope-intercept form.
- Given the equation of a line in point-slope form, write the equation of a line in slope-intercept form.
- Classify triangles by their sides.
- Use a Venn diagram to classify special quadrilaterals.
- General characteristics that distinguish parallelograms, rectangles, squares, rhombuses, trapezoids.
- Identify congruent angles when two parallel lines are crossed by a transversal.
- Determine measures of angles formed by intersecting lines.
- Identify when triangles are congruent to find missing corresponding sides or angles.
- Characteristics of similar figures.
- Relationship between sides and areas of similar figures.
- Triangle inequality property relationship among the sides of a triangle.
- Find missing sides or angles of equilateral or isosceles triangles.
- Identify the measurement needed to find the area of a triangle and calculate the area.
- Properties of circles including radius, diameter, sector, central angle.
- Find the radius of a circle given the circumference.
- Properties of tangent lines (perpendicular to segments).
- Difference between inscribed and central angles of a circle.

1. What is the value of the expression $\frac{x^2}{2} + xy^3$ when $x = 4$ and $y = -2$?

- A. -28
- B. -24
- C. -20
- D. -16

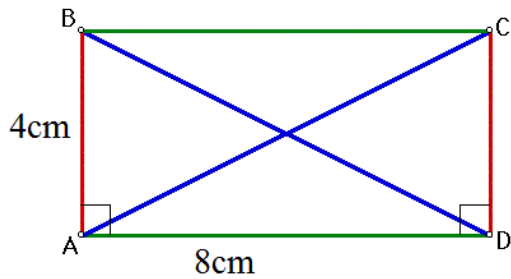
2. $(5m^3 + 2m^2 - m) + (m^2 + 4m - 2) =$

- A. $5m^3 + 3m^2 - 5m + 2$
- B. $5m^3 + 2m^2 - 5m - 2$
- C. $5m^3 + 2m^2 + 3m + 2$
- D. $5m^3 + 3m^2 + 3m - 2$

3. Kim rented a moving truck. The total cost included a one-time fee of \$40.00 and \$0.75 for each mile driven. Which equation represents the total cost, t , in dollars of renting a truck that was driven for n miles?

- A. $t = 40 + 0.75n$
- B. $t = 40 + \frac{0.75}{n}$
- C. $t = 0.75 + 40n$
- D. $t = 0.75 + \frac{40}{n}$

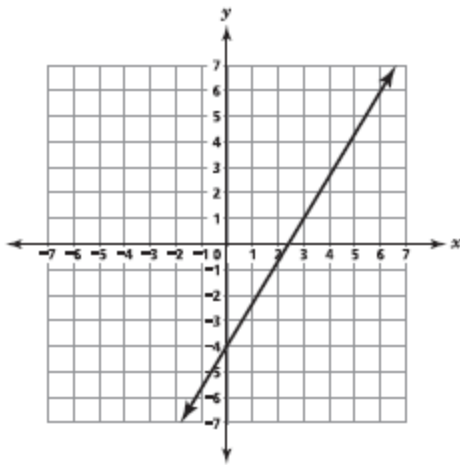
4. The rectangle above is four centimeters high and 8 centimeters wide. What is the approximate length of each diagonal?



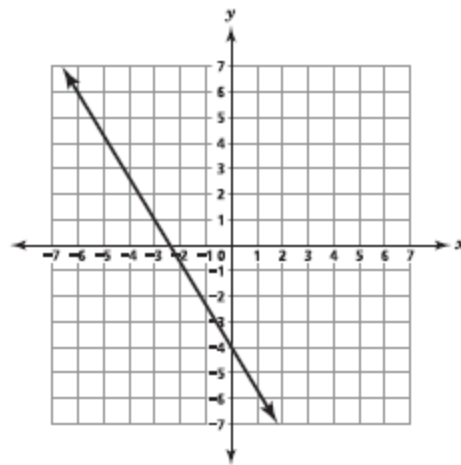
- A. 7 cm.
- B. 9 cm.
- C. 10 cm.
- D. 12 cm.

5.

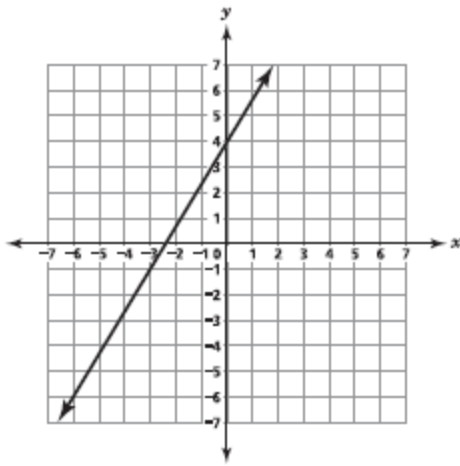
Which graph best represents the equation $5x - 3y = 12$?



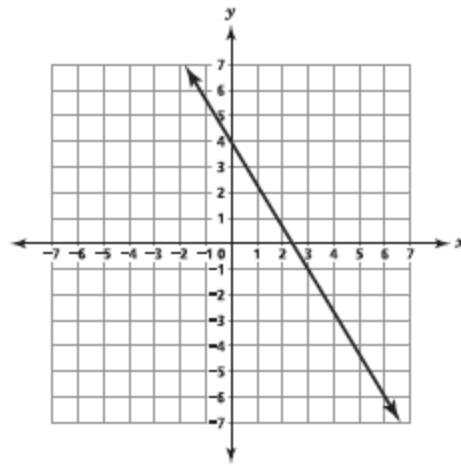
A



C



B



D

6. The distance in miles, y , a bicyclist is from home after riding x hours is represented by the equation $y = 8x + 7$. What does the slope represent in this equation?

- A. The number of hours it takes to ride 15 miles.
- B. The distance the bicyclist is from home when $x = 0$.
- C. The steepness of the hill the bicyclist is climbing.
- D. The speed of the bicyclist.

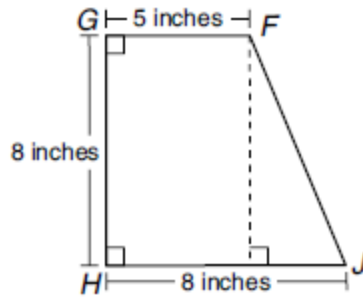
7. Which values of x satisfy the equation $x^2+x-12=0$?

- A. $x = -6$ and $x = 2$
- B. $x = -4$ and $x = 3$
- C. $x = -3$ and $x = 4$
- D. $x = -2$ and $x = 6$

8. If A and B are complimentary angles and the measure of angle A is x , which equation can be used to find the measure of angle B?

- A. $y = 90 + x$
- B. $y = 90 - x$
- C. $y = 180 - x$
- D. $y = 180 + x$

9. The total area of trapezoid FGJJ is 52 square inches. What is the approximate length of \overline{FJ} ?



- A. 8.0 in.
- B. 8.5 in.
- C. 11.0 in.
- D. 11.5 in.

10. Which property of addition is shown? $(g + h) + j = g + (h + j)$

- A. Commutative Property of Addition
- B. Distributive Property
- C. Associative Property of Addition
- D. Identity Property

11. For the point $(-6,4)$, 4 is located where?

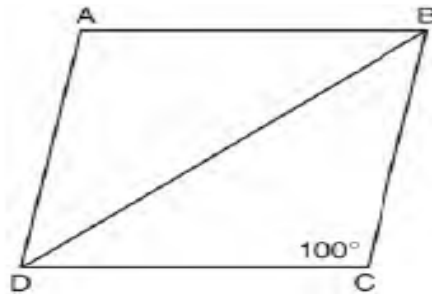
- A. To the left of the y-axis.
- B. To the right of the y-axis.
- C. On the y-axis.
- D. On the x-axis.

12. David wanted to go on an amusement park ride. A sign posted at the entrance read “You must be greater than 42 inches tall and no more than 57 inches tall for this ride.” Which inequality would model the height, x , required for this amusement park ride?

- A. $42 < x \leq 57$
- B. $42 > x \geq 57$
- C. $42 > x$ or $x \geq 57$
- D. $42 < x$ or $x \leq 57$

13. In rhombus ABCD, the measure of angle C is 100° . What is the measure of angle DBC?

- A. 40°
- B. 45°
- C. 50°
- D. 80°



14. The formula for the volume of a cone is $V = \frac{1}{3}\pi r^2 h$. Solve the equation for h in terms of V , r , and π .

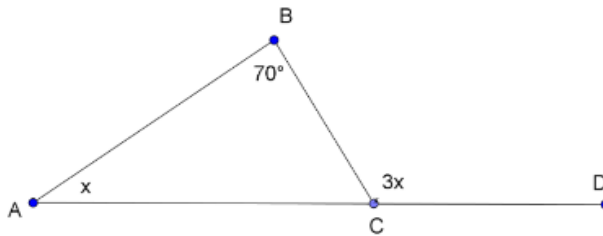
$$h =$$

15. Find the value of x .



- A. 6.5
- B. 7
- C. 14
- D. 26

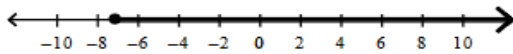
16. Find the measure of $\angle ACB$.



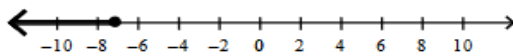
- A. 35°
- B. 70°
- C. 75°
- D. Not enough information

17. Which of the following represents the solution to $3t - 12 \leq -9$?

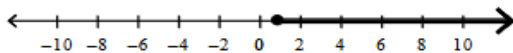
- A. $t \geq -7$



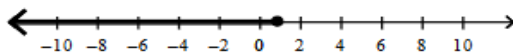
- B. $t \leq -7$



- C. $t \geq 1$



- D. $t \leq 1$



18. Which choice is equivalent to the expression $\frac{(a^3b)^4}{b^2}$?

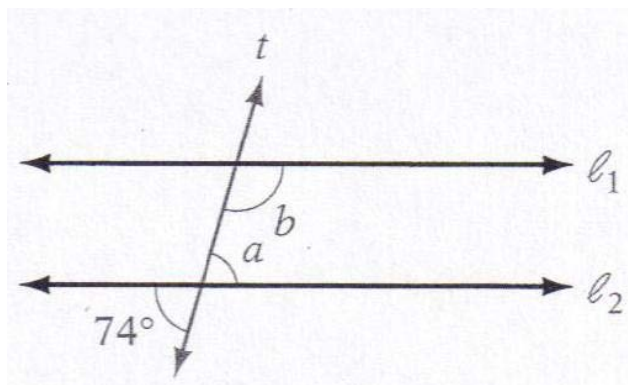
- A. a^7b^2
- B. $\frac{a^3}{b^2}$
- C. $\frac{a^{12}}{b^2}$
- D. $a^{12}b^2$

19. What is wrong with using this expression to find the slope between (a,b) and (c,d) :

$$m = \frac{b - a}{d - c}$$

- A. b is a y value, a is a y value
- B. b is a x value, a is a y value
- C. a is an x value
- D. b is a y -value, a is an x -value

20. Find the measure of angle b .



- A. 74°
- B. 106°
- C. 148°
- D. 164°

21. What is the product of the additive inverse and the multiplicative inverse of $1/4$?

- A. -4
- B. $-1/4$
- C. -1
- D. $1/16$

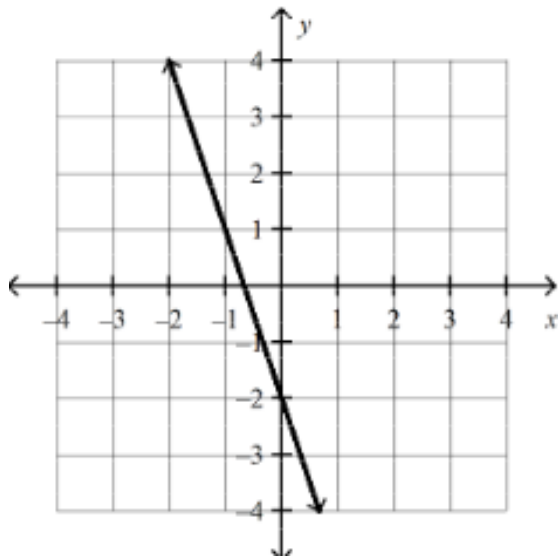
22. A positive integer is multiplied by 5; then 4 is subtracted from the result, and that result is divided by 7. Which of the following steps reverses that procedure?

- A. Divide the final number by 7, add 4, and multiply by 5.
- B. Divide the final number by 7, subtract 4, and multiply by 5.
- C. Multiply the final number by 7, add 4, and multiply by 5.
- D. Multiply the final number by 7, add 4, and divide by 5.

23. A square garden has a diagonal path from one corner to another. If the path is about 42 feet long, what is the approximate length of each side of the garden?

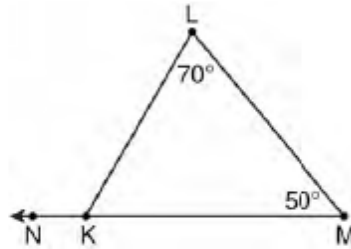
- A. 6 ft.
- B. 21 ft.
- C. 30 ft.
- D. 63 ft.

24. Which linear equation represents the graph?



- A. $y = -3x - 2$
- B. $y = 3x + 2$
- C. $y = -\frac{1}{3}x + 2$
- D. $y = \frac{1}{3}x - 2$

25. In the diagram of triangle KLM below, the measure of angle L = 70° , the measure of angle M = 50° , and \overline{MK} is extended through N. What is the measure of angle LKN?



- A. 60°
- B. 120°
- C. 180°
- D. 300°

SOLUTIONS: ALGEBRA AND GEOMETRY

1. B
2. D
3. A
4. B
5. A
6. C
7. B
8. B
9. B
10. C
11. A
12. A
13. A
14. $h = \frac{3V}{\pi r^2}$
15. B
16. C
17. D
18. D
19. D
20. B
21. C
22. D
23. C
24. A
25. B