GRADE 9 FINAL EXAM MULTIPLE CHOICE PRACTICE

CHAPTER ONE: SQUARE ROOTS AND SURFACE AREA

1. What is the square root of ?

A) B) C) D)

2. What is the square root of ?

(A) (B) (C) (D)

3. What is ?

A) B) 0.64 C) D)

4. Which is a perfect square?

A) 0.049 B) C) D) 2.5

5. Which number below is NOT a perfect square?

A) 4 B) 6 C) 9 D) 16

6. What is the approximate side length, in centimetres, of a square with area of 204 cm2?

A) B) C) D)

7. Which decimal has a square root between and ?

A) B) C) D)

8. Between which two whole numbers is ?

A) 2 and 3 B) 7 and 8 C) 16 and 81 D) 49 and 64

9. Evaluate Reduce to lowest terms.

A) B) C) D)

10. Evaluate Reduce to lowest terms.

A) B) C) D)

11. Which is a square number?

(A) 0.09 (B) 0.144 (C) (D)

12. Which is a perfect square?

A) 2 B) 12 C) 21 D) 121

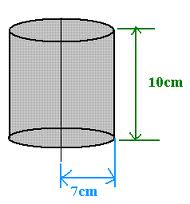
13. Which has a square root of 1.6?

A) 0.4 B) 0.8 C) 1.26 D) 2.56

14. The diameter of a cylinder is 12 cm. What is its radius?

A) 2 cm B) 6 cm C) 24 cm D) 144 cm

15. The radius of a cylinder is 4m. What is the diameter?



A) 2m B) 8m C) 12m D) 16m

16. What is the surface area of the cylinder shown in the diagram? (Use π = 3.14)

A) 153.9 cm2 B)615.4 cm2 C)747.4 cm2 D) 2110.1 cm2

17. What is the surface area of a cube with aside length of 7cm.

A) B) C) D)

CHAPTER TWO: POWERS AND EXPONENT LAWS

1. Evaluate:

A) B) C) D)

2. Evaluate:

A) 6 B) 9 C) 72 D) 729

3. What is as a single power?

A) B) C) D)

4. What is as a single power?

A) B) C) D)

5. Which is the power with a base of 6 and exponent of 3?

A) B) C) D)

6. Which shows written as a repeated multiplication?

A) B) C) D)

7. Evaluate:

A) B) C) D)

8. Simplify:

A) B) D) D)

9. Which expression is equivalent to ?

A) (B) (C) (D)

10. In which step was the first mistake made?

*Step 1*

*Step 2*

*Step 3*

*Step 4*

(A) 1 (B) 2 (C) 3 (D) 4

11. What is the value of

A) 12 B) 4 C) 3 D) 1

12. What is written as a single power?

A) B) C) D)

13. Which statement is true?

A) B) C) D)

14. Which is a power with a base of 7 and an exponent of 2?

A) B) C) D) 14

15. Which shows the power written as repeated multiplication?

A) -1 ×11×11×11 B) (-11)(-11)(-11) C) (-33)(-33)(-33) D) -1 ×33×33×33

16. Evaluate:

A) 9 B) 17 C) 25 D) 64

17. Simplify: ÷

A) 9 B) C) D)

18. What is written as a single power?

A) B) C) D)

19. Which statement is true?

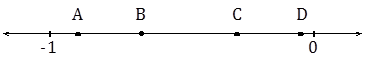
A) B) C) D)

CHAPTER THREE: RATIONAL NUMBERS

1. Which are rational numbers?

A) B) C) D)

2. Which point is closest to ?



(A) A (B) B (C) C (D) D

3. Which shows ordered from least to greatest?

A) B)

C) D)

4. What set is ordered from least to greatest?

A) B)

C) D)

5. Which number is between and ?

A) B) C) D)

6. Evaluate:

A) B) C) D)

7. Evaluate:

A) B) C) D)

8. Mrs. Burry mixes of water with of strawberry syrup. How much drink does she have?

A) B) C) D)

9. In Centreville on February 5 at 2:00pm, the temperature was On February 6 at 7:00am, the temperature was . What was the overall change in temperature?

A) B) C) D)

10. Which number is between and ?

(A) (B) (C) `(D)

11. Sal paints a wall in his art classroom. He uses of blue paint and of white paint. How much paint does he use?

A)L B)L C)L D)L

12. Which mathematical expression would be performed first using order of operations?

A) B) C) D)

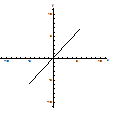
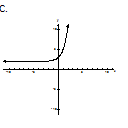
13. Which statement is correct?

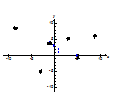
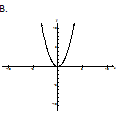
A) B)

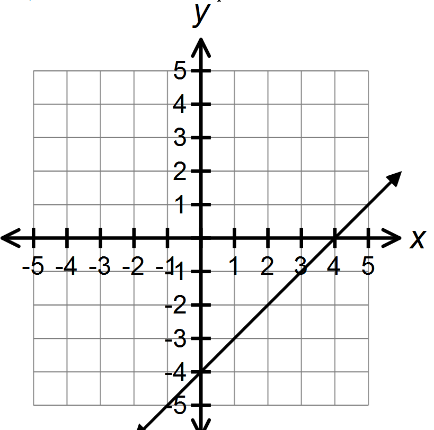
C) D)

CHAPTER FOUR: LINEAR RELATIONS

1. Which graph represents a linear relation?

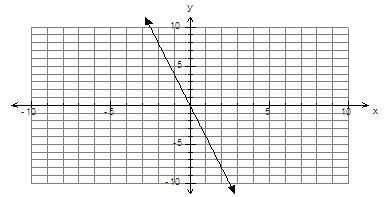




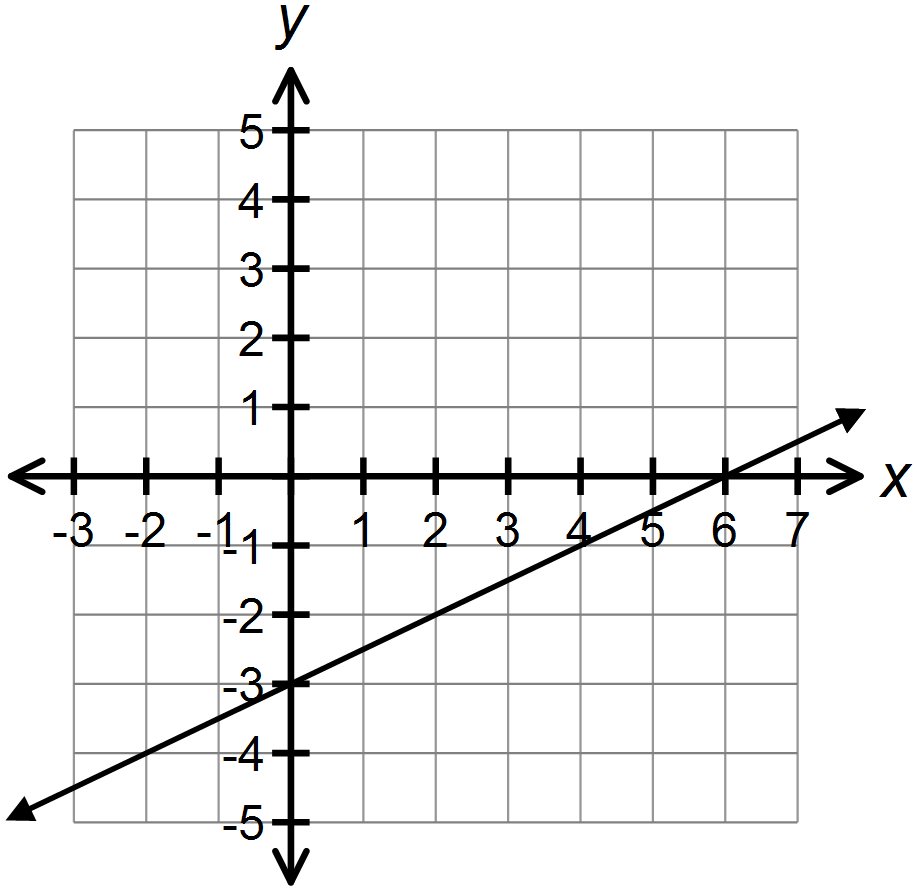


2. For the linear relation, what is the value of when ?

A) -6 B) 2 C) 4 D) 6

3. What is the value of when?

A) -8 B) - C) D) 8



4. Which equation represents the graph?

A)

B)

C)

D)

5. Which is a point on the line with equation?

A) B) C) D)

6. Which point would lie on the line ?

(A) (B) (C) (D)

7. Which table of values represents the equation ?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | X | -2 | -1 | 0 | 1 | 2 | | y | -5 | -3 | -1 | 1 | 3 | |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | X | -2 | -1 | 0 | 1 | 2 | | y | 3 | 1 | -1 | -3 | -5 | |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | X | -2 | -1 | 0 | 1 | 2 | | y | -3 | -1 | 1 | 3 | 5 | |
|  | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | X | -2 | -1 | 0 | 1 | 2 | | y | -1 | 0 | 1 | 2 | 3 | |

8. Which equation relates the term value, , to the term number, ?

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

A)

B)

C)

D)

9. Which equation below corresponds to the table shown?

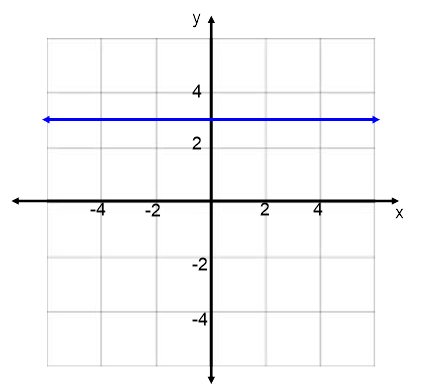
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S | 1 | 2 | 3 | 4 |
| p | -5 | 2 | 9 | 16 |

A) B) C) D)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10. | Which equation would produce the given table of values? | | |  |  | | --- | --- | | x | y | | 0 |  | | 1 |  | | 2 |  | | 3 |  | | 4 |  | |
| (A) |  |
| (B) |  |
| (C) |  |
| (D) |  |

11. Which graph represents the linear equation y ?



12. What is the correct equation for the line displayed?

A) B) C) D)

13. Which equation below represents a vertical line?

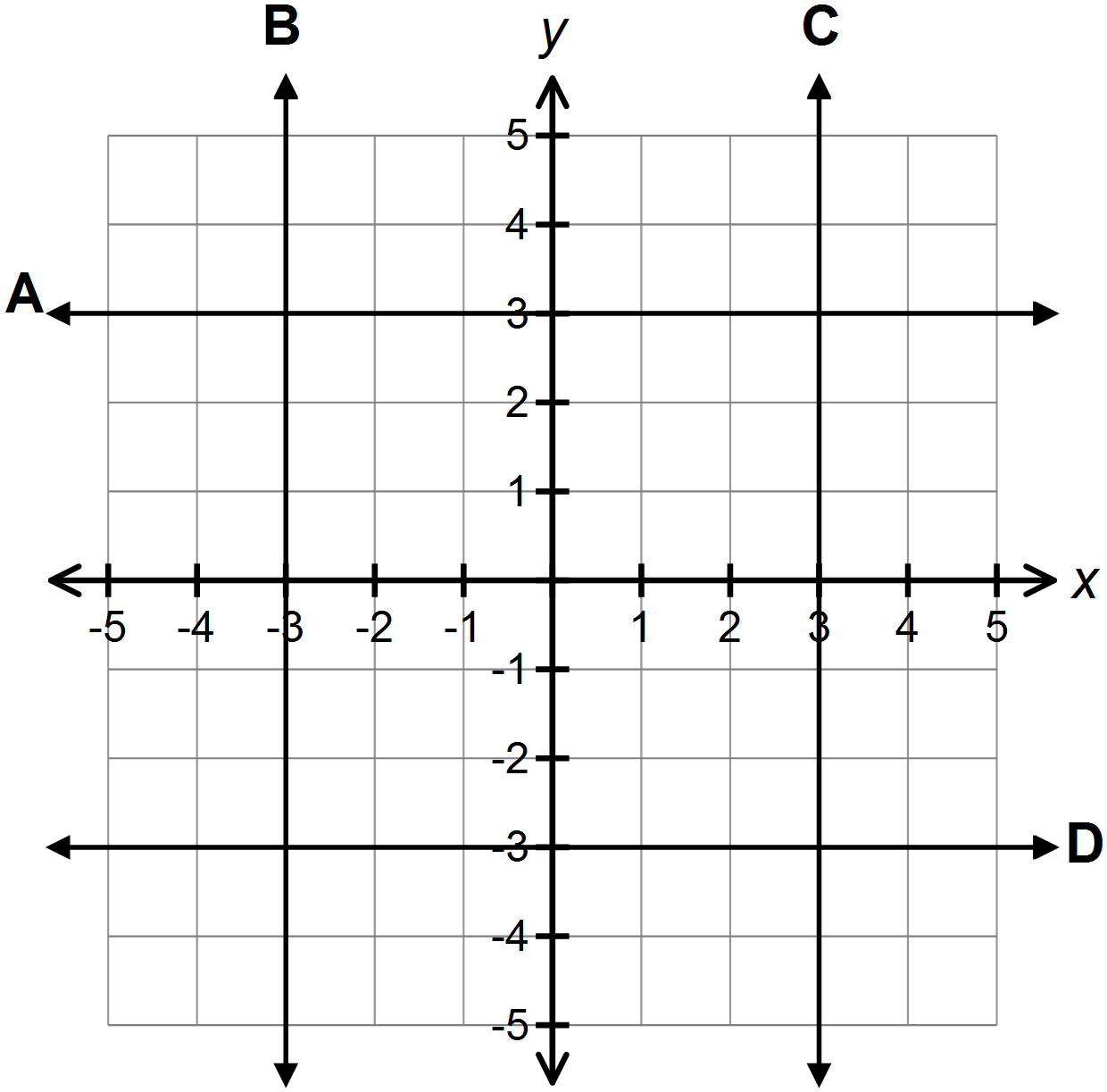
A) B) C) D)

|  |  |  |
| --- | --- | --- |
| 14. | What is the equation of the dashed line shown on the graph? | |
| (A) |  |
| (B) |  |
| (C) |  |
| (D) |  |

15. Which is an equation of a horizontal line?

A) B) C) D)

16. Which graph shows ?

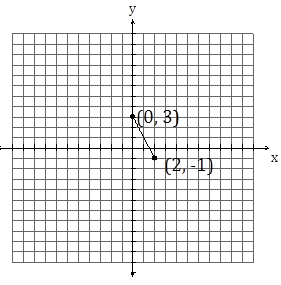
 A) A

B) B

C) C

D) D

17. The graph represents a linear equation. Determine the value of when .



(A) -9

(B) -7

(C) -5

(D)-1.5

18. The cost of renting a car in St. John’s Newfoundland is $120 and an additional $25 per day rented. Which equation relates the cost, c, to the number of days, d.

A) B) C) D)

19. The cost of renting a ski-doo from Jefferies’ Outfitters is $25.00 and an additional $0.40 per kilometer used. Which equation shows the cost, *c*, of renting of a ski-doo in terms of the number of kilometers used *k*?

A) B) C) D)

20. Which describes the relationship between the number of squares and number of line segments.

A) As the number of squares increase by 1, the number of line segments increase by 2

B) As the number of squares increase by 2, the number of line segments increase by 1

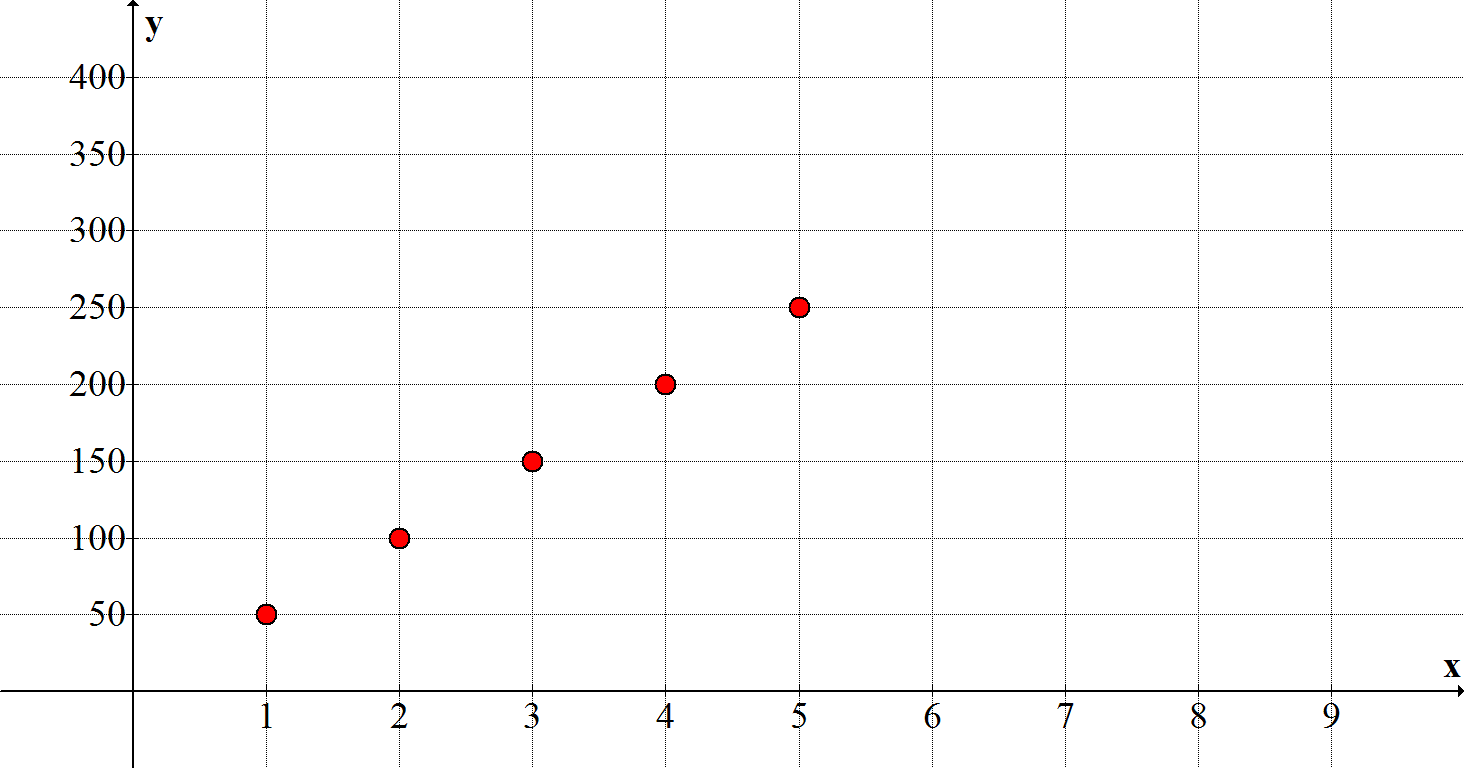
C) As the number of squares increase by 1, the number of line segments increase by 3

D) As the number of squares increase by 3, the number of line segments increase by 1

21. When downloading music from I-tunes, you must pay an initial fee of $5 and an additional $1.29 per song. How much does it cost to download 150 songs?

A) $193.50 B) $198.50 C) $751.29 D) $750.00

22. Lisa is saving money for a trip to Mexico. The graph shows how much money she has saved at the end of each week. How many week will it take to save $350?



A) 5

B) 6

C) 7

D) 8

CHAPTER FIVE: POLYNOMIALS

1. Which represents a binomial with a degree of , a coefficient of and a constant term of ?

A) B) C) D)

2. Simplify:

A) B) C) D)

3. What is a simplified expression for ?

(A) (B) (C) (D)

4. Simplify:

A) B) C) D)

5. Simplify:

A) B) C) D)

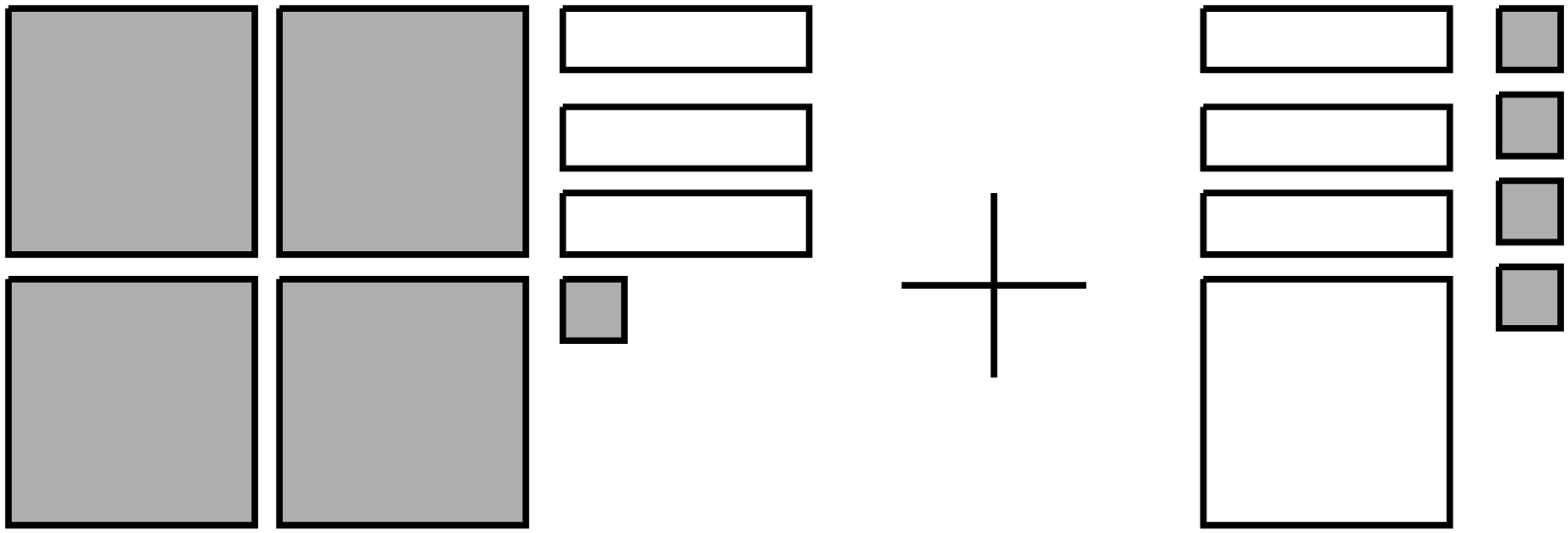
6. Simplify:

A) B) C) D)

7. What is the quotient of ?

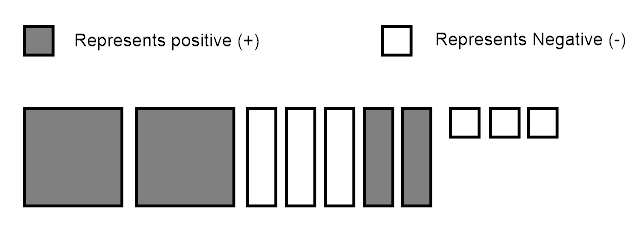
(A) (B) (C) (D)

8. Which polynomial is modeled by the algebra tiles? [shaded is positive]



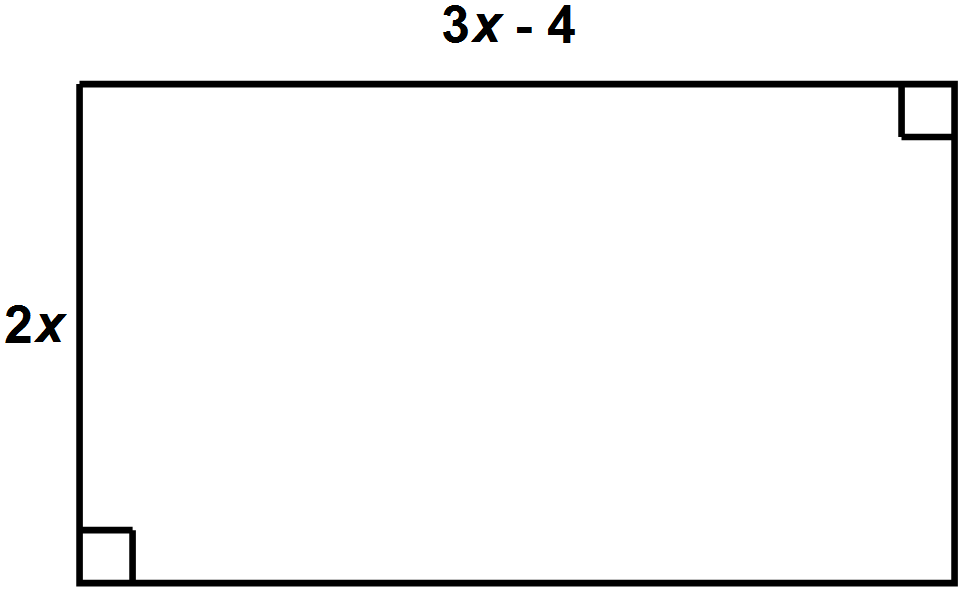
A) B)

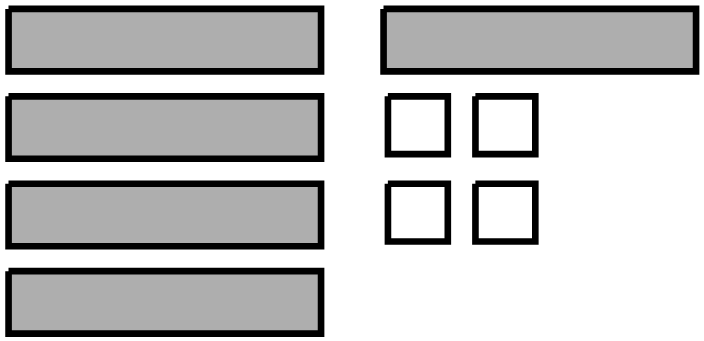
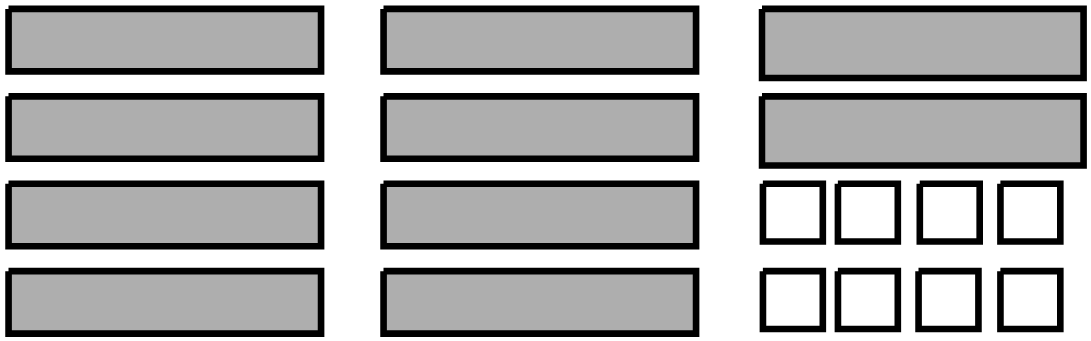
C) D)

9. Which polynomial is represented by the model displayed?

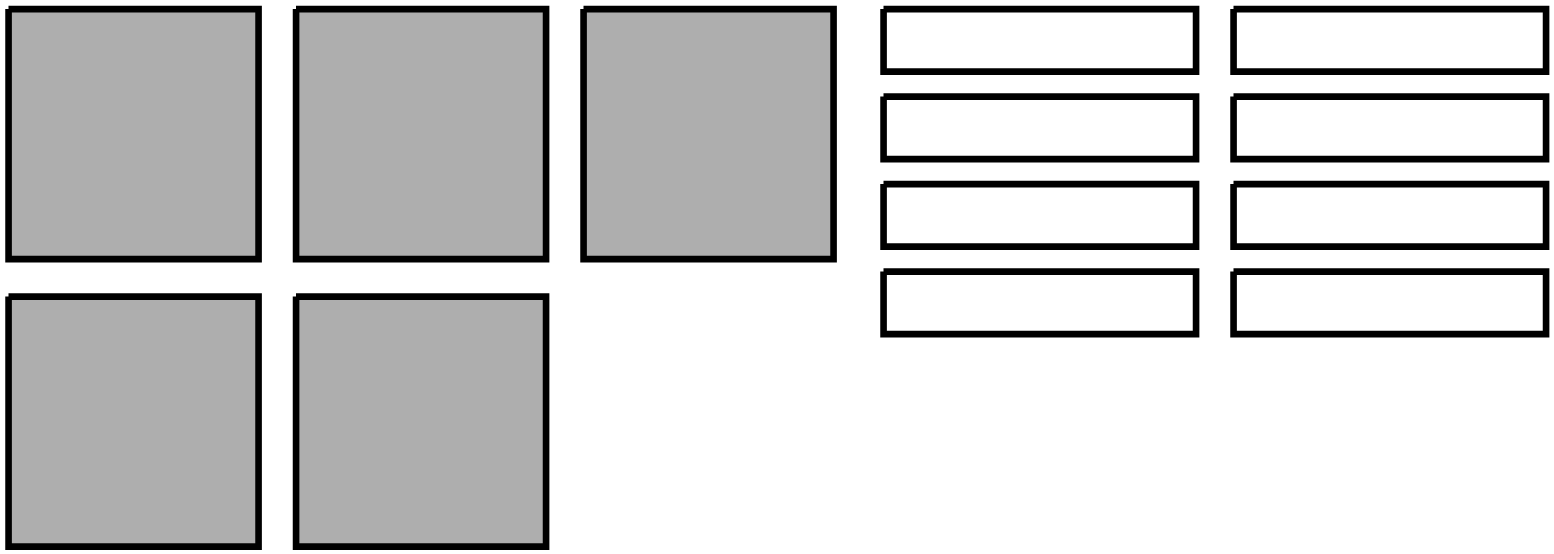
A) B) C) D)

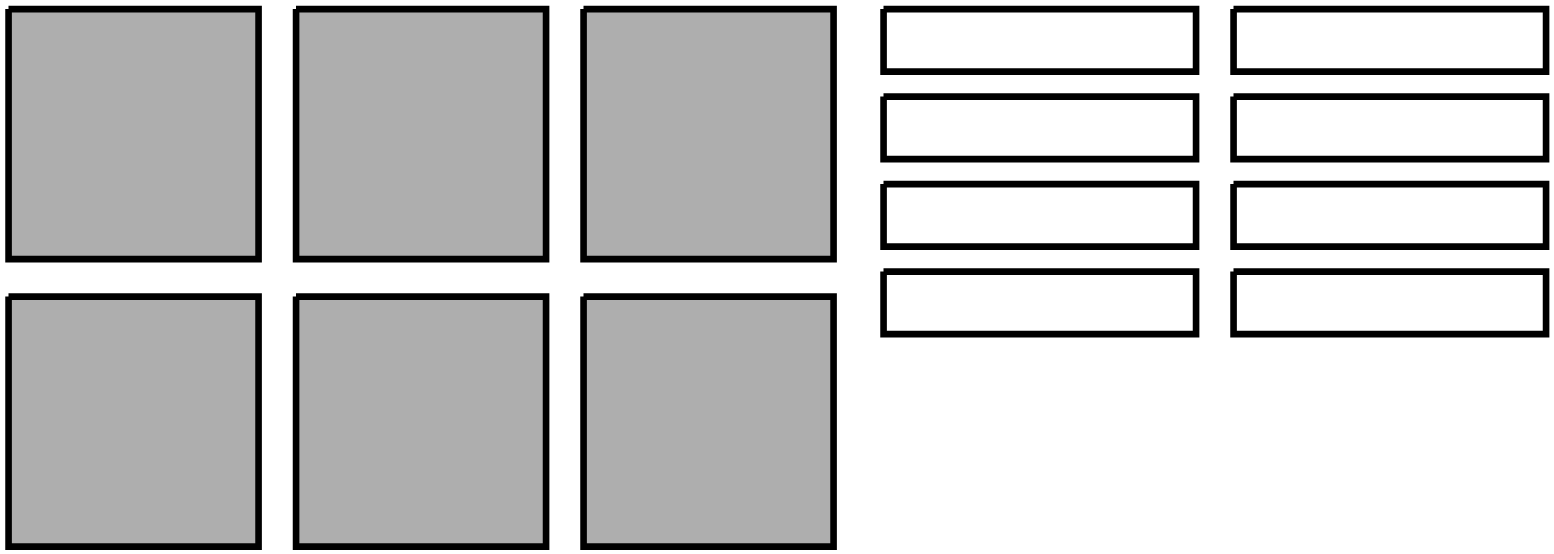
10. Which model represents the perimeter of the rectangle? [shaded is positive]



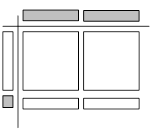
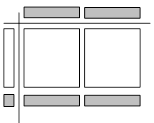
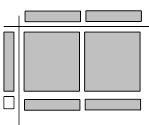
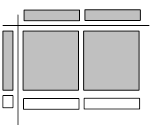
A) B)

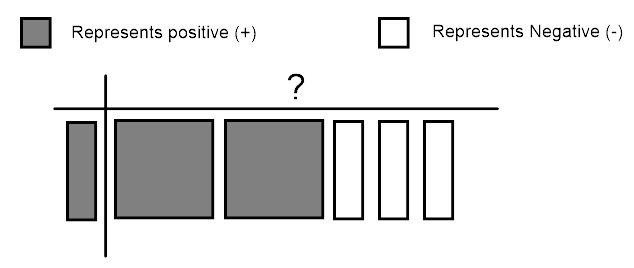
C) D)





11. Which model represents the product ? 

 (A) (B) (C) (D)



12. What is the quotient for the division sentence modeled?

A)

B)

C)

D)

CHAPTER SIX: LINEAR EQUATIONS AND INEQUALITIES

1. Which is the solution to the equation ?

A) B) C) D)

2. Solve:

(A) (B) (C) (D)

3. Solve:

A) B) C) D)

4. Which equation represents the statement “seven less than one-fifth of a number is the same as twice that number increased by one?”

A) B) C) D)

5. Which equation has a solution of ?

A)  B) C) D)

6. Which equation has as its solution?

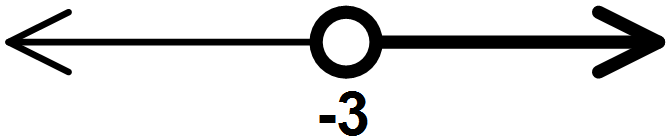
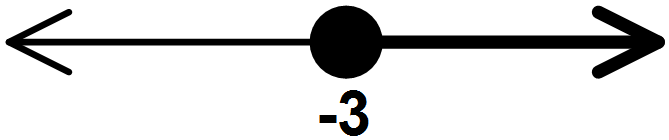
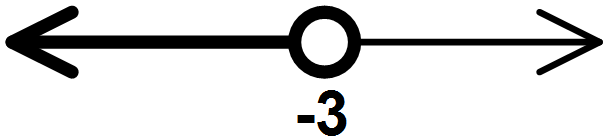
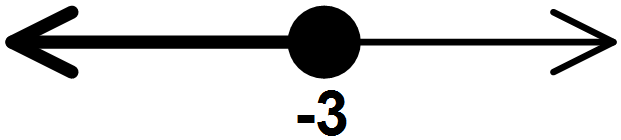
A) B) C) D)

7. Solve:

(A) (B) (C) (D)

8. Which represents the solution to ?

A) B) C) D)



|  |  |  |
| --- | --- | --- |
| 9. | Which represents the solution set ? | |
| (A) |  |
| (B) |  |
| (C) |  |
| (D) |  |

10. Which has solution ?

(A) (B) (C) (D)

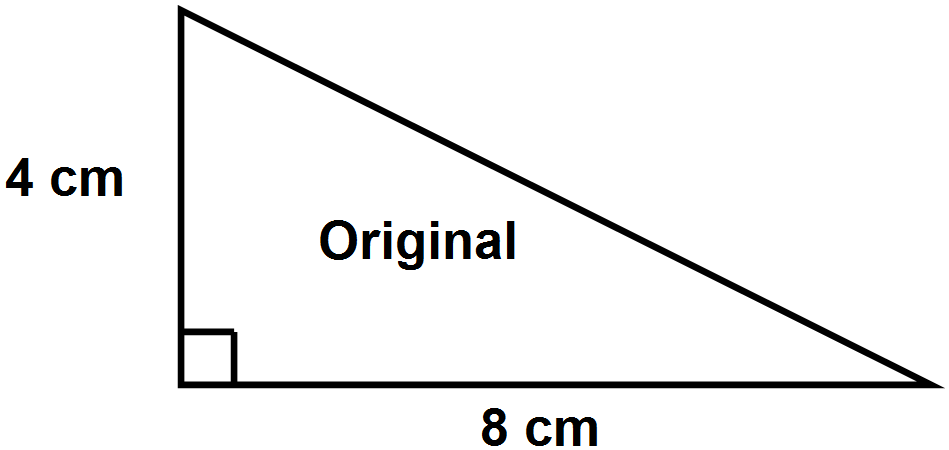
11. Solve the inequality

A) B) C) D)

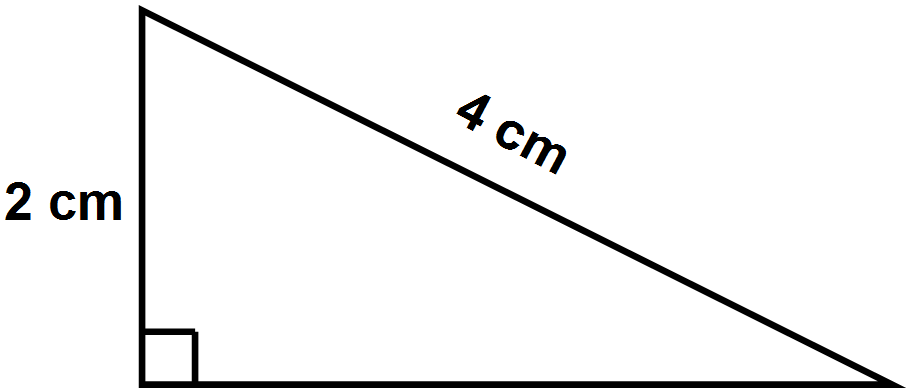
CHAPTER SEVEN: SIMILARITY AND TRANSFORMATIONS

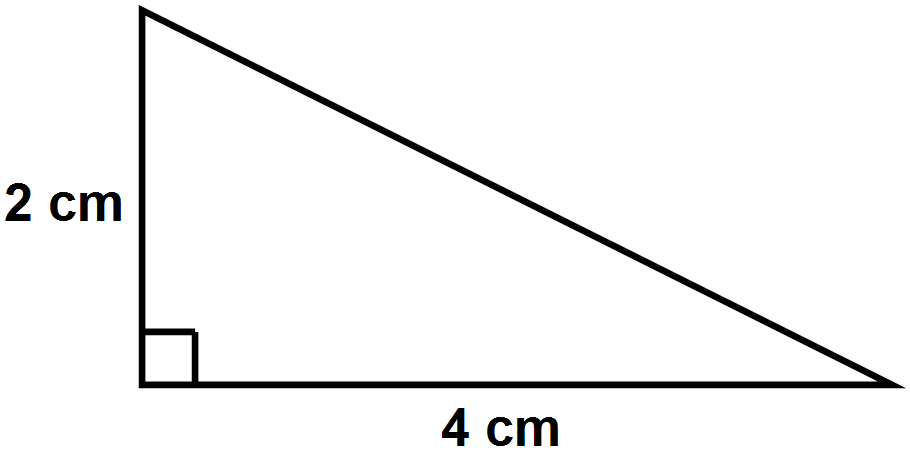
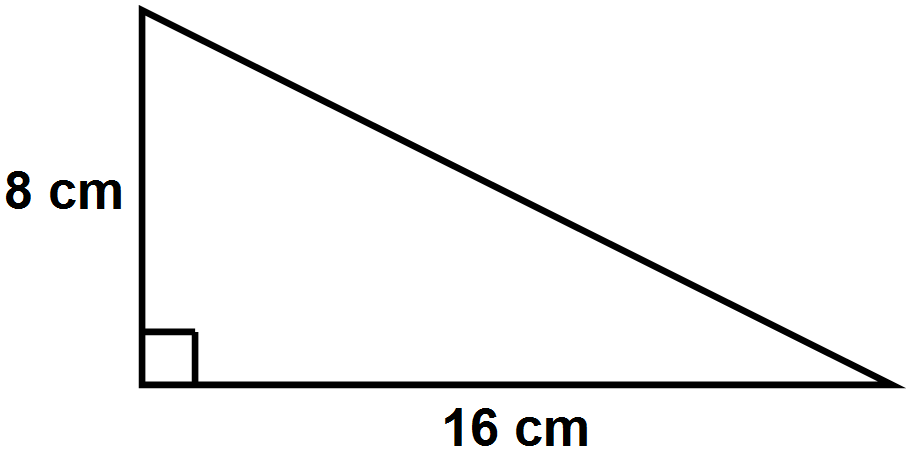
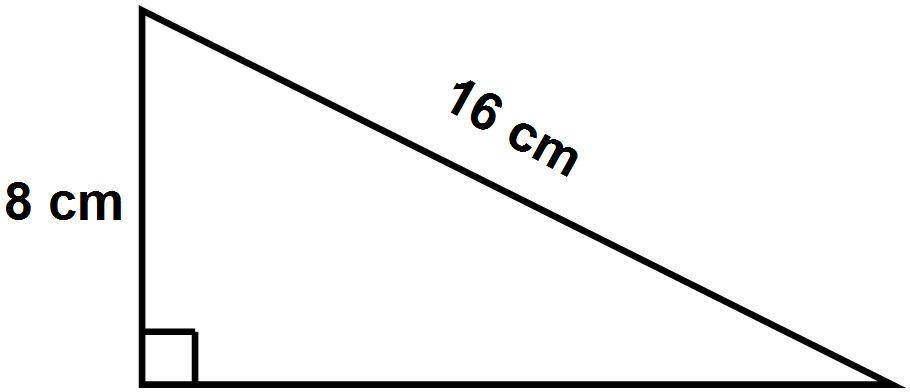
1. An object’s image has a scale factor of 1.32 with respect to the original. What term describes the image?

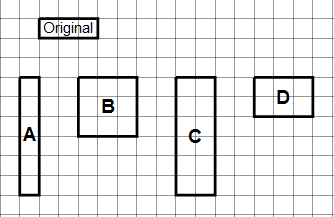
A) Copy B) Enlargement C) Original D) Reduction

2. A scale factor of is applied to the triangle. Which is the resulting image?



 A) B) C) D)



3. Which diagram is similar to the original?

A) A

B) B

C) C

D) D

|  |  |  |
| --- | --- | --- |
| 4. | What is the scale factor for the image? |  |
| (A) |
| (B) |
| (C) |
| (D) |

5. A cube undergoes a reduction. The new surface area of the cube is 54 cm2. If the scale factor for the reduction was 0.5, what was the side length, in cm, of the original cube?

A) 3 B) 6 C) 9 D) 27

6. Given that , which statement is true?

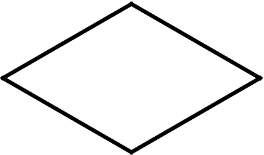


(A) (B) (C) (D)



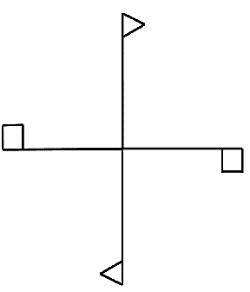
7. In the regular pentagon shown, what is the angle and order of rotational symmetry?

(A) (B) (C) (D)



8. How many lines of symmetry are in a rhombus?

A) 1 B) 2 C)3 D) 4



9. What is the angle of rotation for the figure?

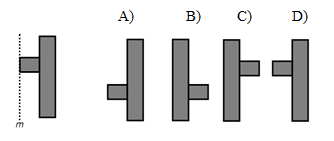
A) B) C) D)

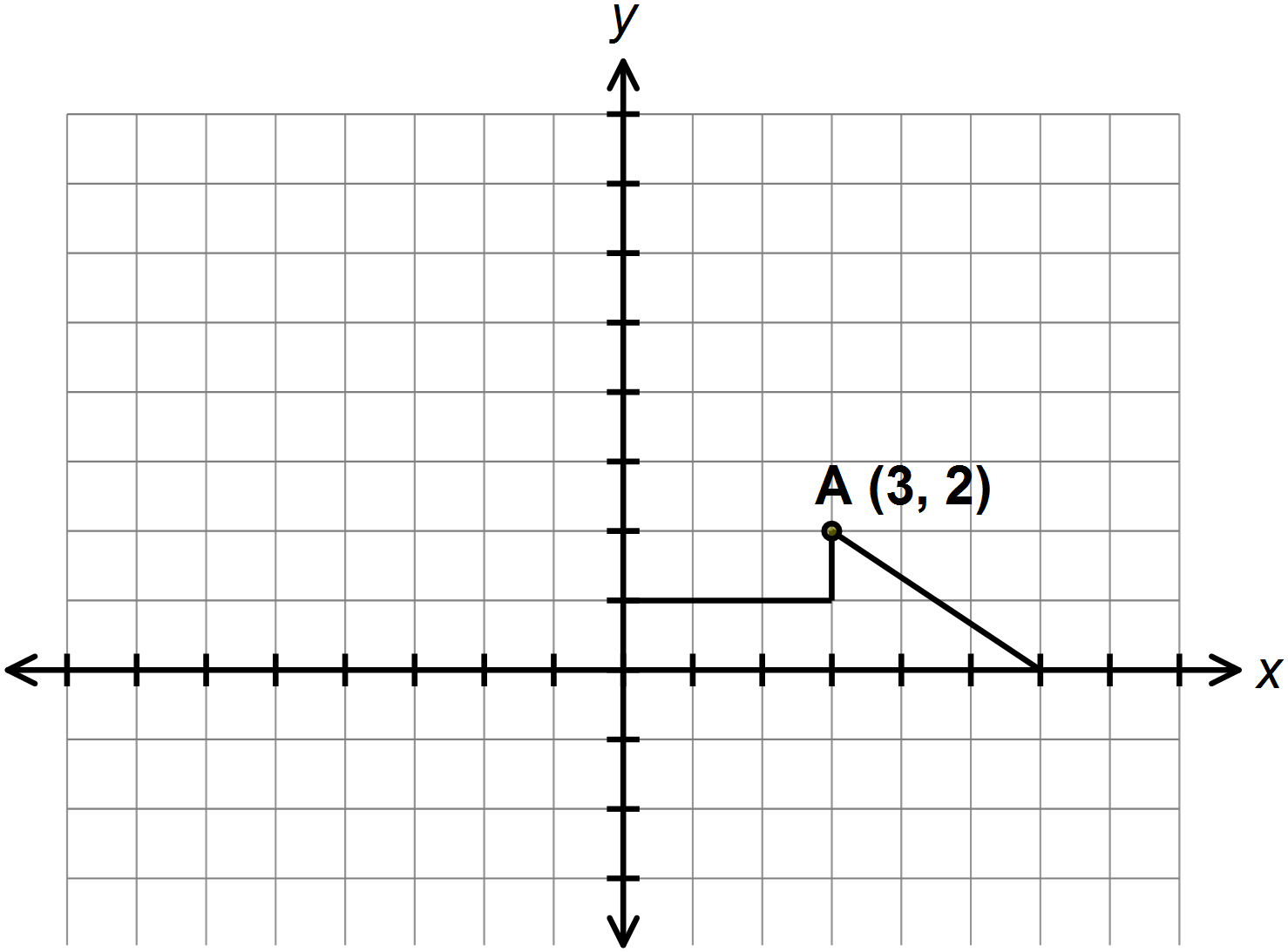


10. What is the order and angle of rotation symmetry of this starfish?

A) 5, 60o B) 5, 72o C) 6, 60o D) 6, 72o

11. Using the dotted line *m* as the line of symmetry, which figure represents the other half of the shape?



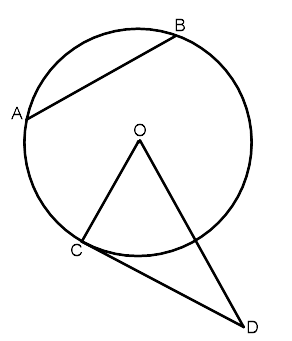
12. If the y-axis is the line of symmetry, what are the coordinates of ?

 A)

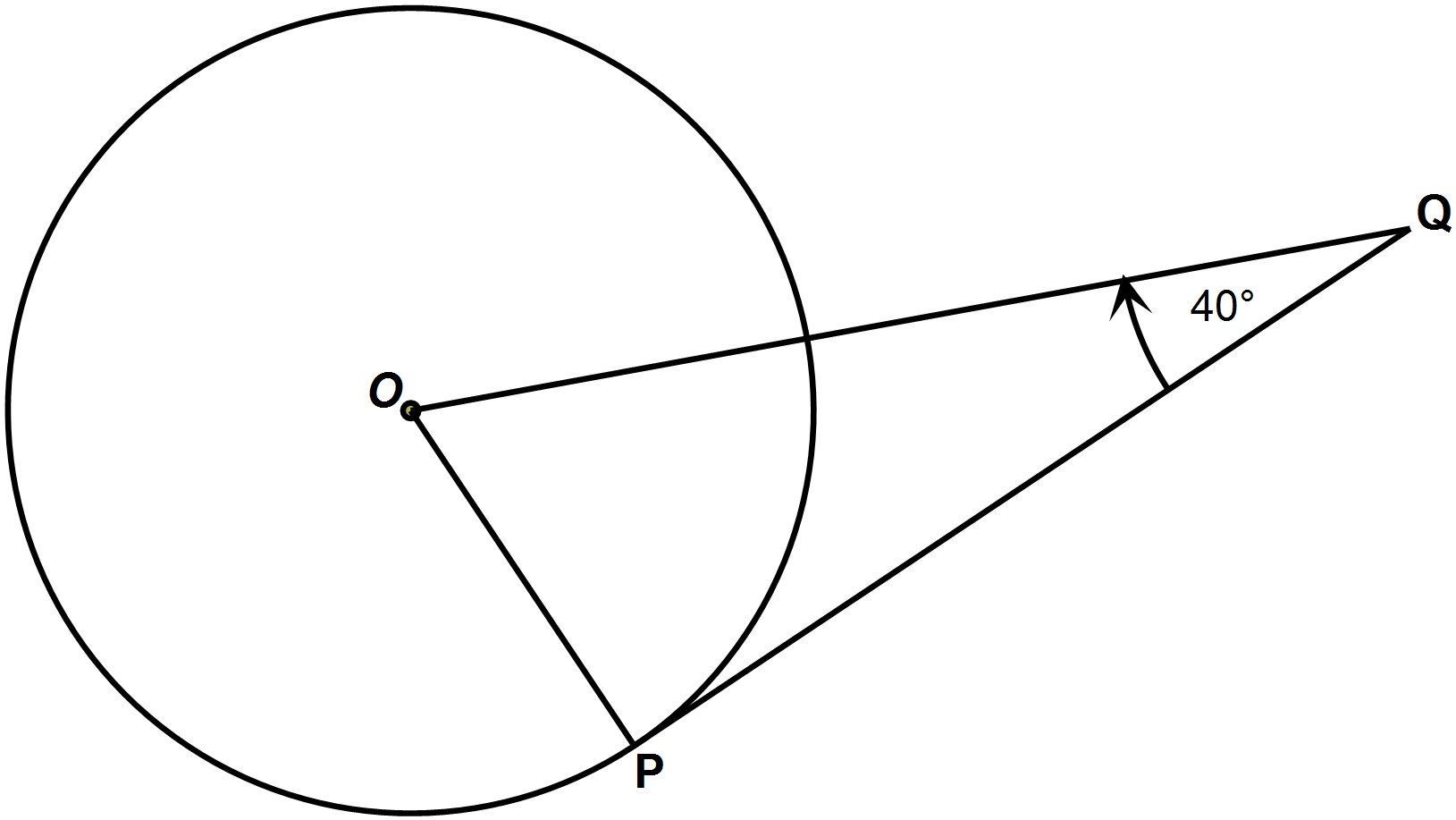
B)

C)

D)

CHAPTER EIGHT: CIRCLE GEOMETRY

1. In the circle with centre O shown, which is a tangent?

 A) B) C) D)

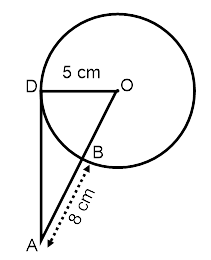
2. is tangent to . What is the measure of ?

A)

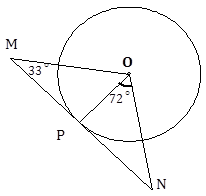
B)

C)

D)

3. In the circle with center O shown, point D is the point of tangency. What is the length, in cm, of ?

A) 8  
 B) 12  
 C) 13  
 D) 18

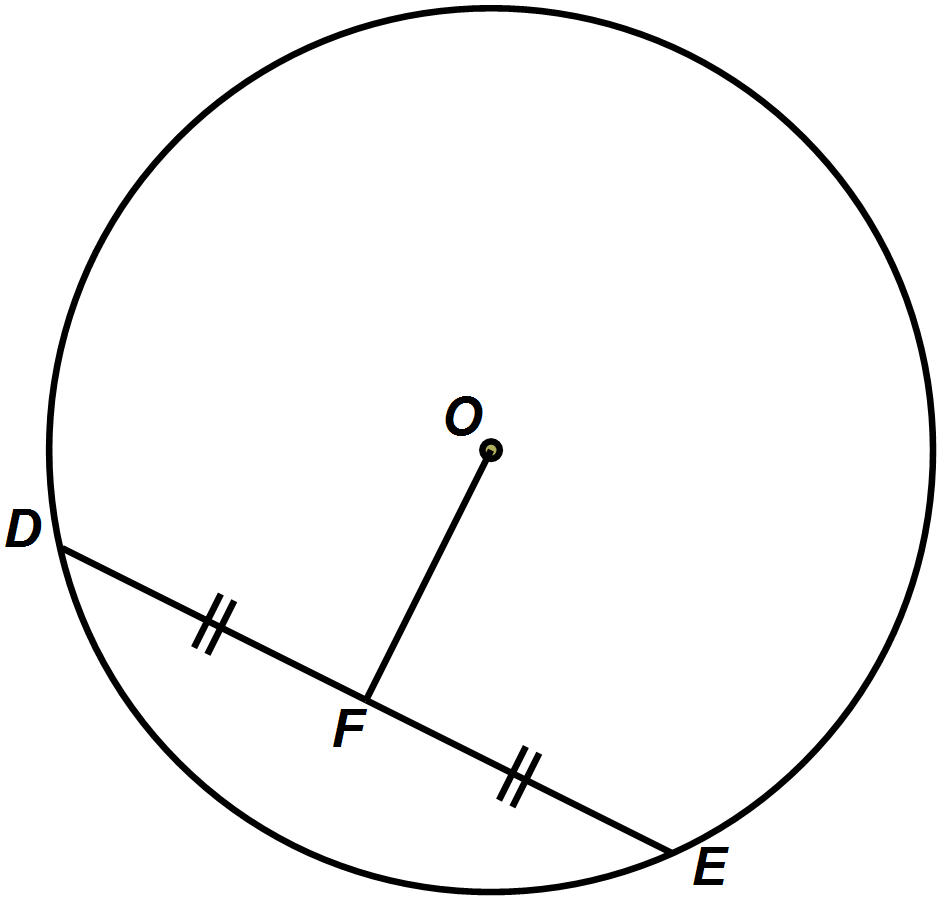
4. In the circle with point of tangency, P, and . What is ?

(A)

(B)

(C)

(D)

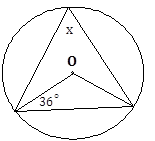
5. A circle with a radius of and . What is the length of ?

A)

B)

C)

D)

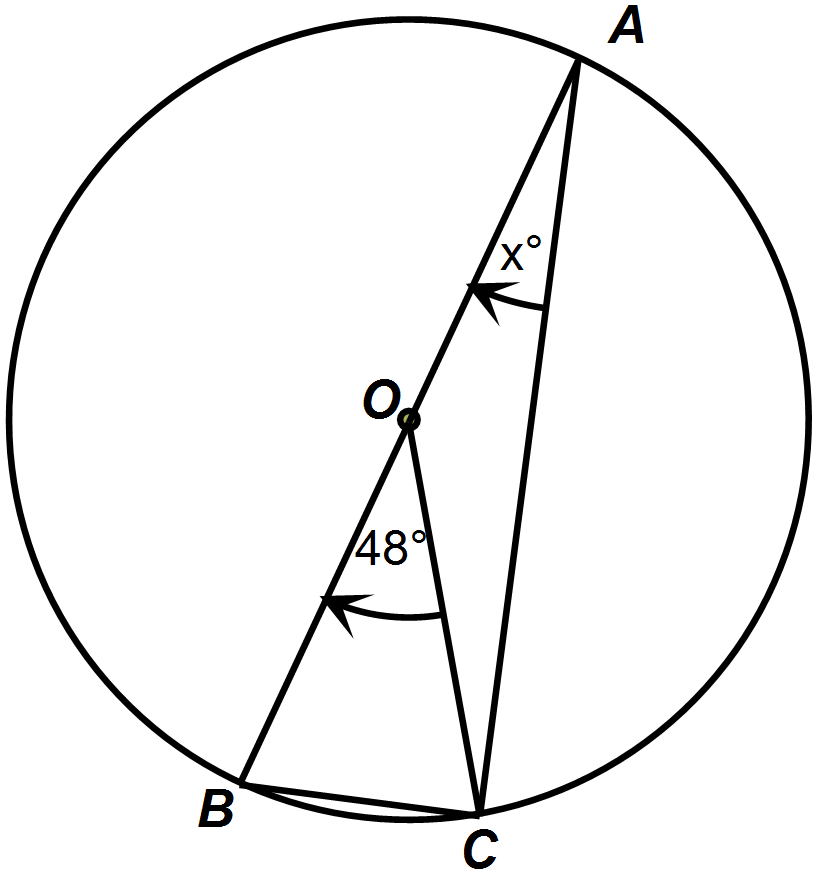
6. Given the circle with center O, what is the value of ?

(A)

(B)

(C)

(D)

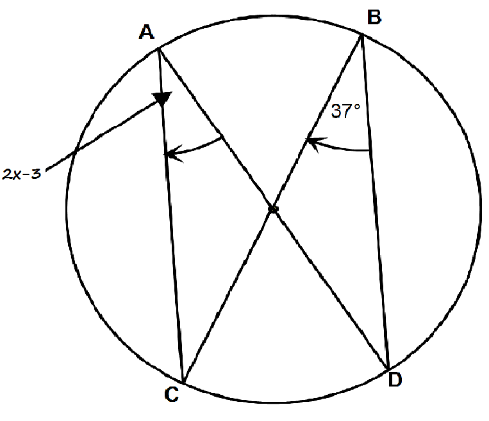
7. Point is the centre of a circle. What is the value of ?

A)

B)

C)

D)



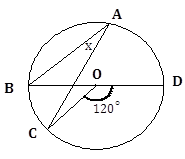
8. What is the value of ?

A)

B)

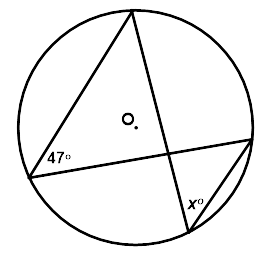
C)

D)



9. In the circle with center, O, . Determine the value of

(A) (B) (C) (D)

10. Given the circle, with centre O, below, what is the measure of angle *xo,* in degrees?

A) 23.5  
 B) 47  
 C) 82

D) 94

CHAPTER NINE: PROBABILITY AND STATISTICS

1. Which situation represents bias?

A) bus students are asked about their views on the new bus route

B) mall shoppers are surveyed about their opinions on the new food court design

C) people at a pop machine are asked to choose their favorite type of beverage

D) teenagers are questioned about their favorite winter activities

2. Which situation represents a population?

A) election outcomes are predicted based on a random survey

B) grade 9 students are required to receive vaccinations

C) health of fish stocks are regularly monitored

D) one in ten smartphones are tested for defects

3. A teacher conducted a survey in her class by asking: *“Don’t you think the school should provide paper and pencils for all students?”* What potential problem is present with the teacher’s survey?

(A) cultural sensitivity (B) privacy (C) timing (D)n use of language

4. Which would best be surveyed using an entire population?

(A) taste-testing muffins in a bakery

(B) testing the volume of air a helium balloon would hold before breaking

(C) testing the length of time a battery will last

(D) testing seat belt buckles in a new vehicle

5. Sam flipped a coin 30 times and it landed on *heads* 20 times. What type of probability is this?

A) Biased B) experimental C) subjective D) theoretical

6. A company is planning to open a ski club in your community. To learn about the preferences of the local population, a questionnaire is mailed to the residents in July. What is the biggest potential problem with this method of data collection under these circumstances?

A) cultural sensitivity B) privacy C) timing D) use of language

7. Sam flipped a coin 30 times and it landed on *heads* 20 times. What type of probability is this?

A) Biased B) experimental C) subjective D) theoretical