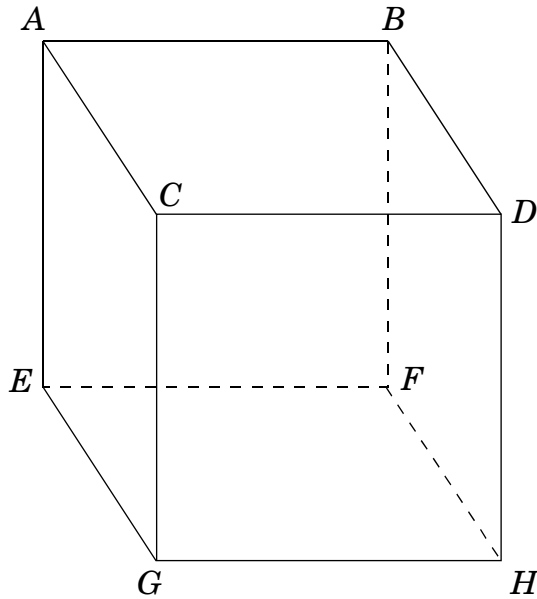
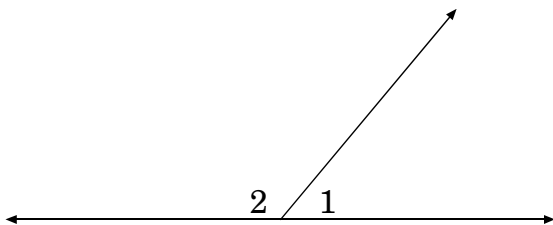


1. Which two line segments on the cube are skew?



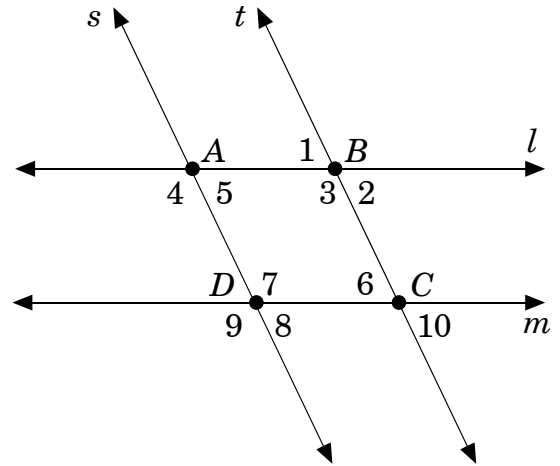
- A \overline{AB} and \overline{EF}
- B \overline{FE} and \overline{EG}
- C \overline{AB} and \overline{AE}
- D \overline{DB} and \overline{GH}

2. Which term describes $\angle 1$ and $\angle 2$?



- A supplementary
- B complementary
- C vertical
- D congruent

3. Line l is parallel to line m , and line s is parallel to line t .

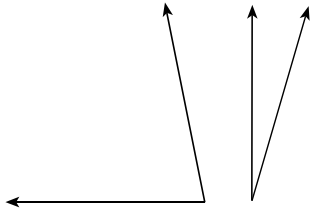


Which of the following is a pair of interior angles in $\square ABCD$?

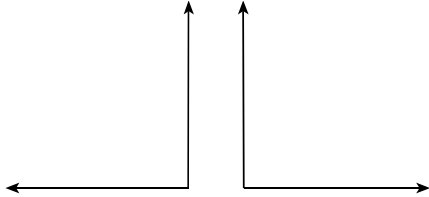
- A $\angle 1$ and $\angle 10$
- B $\angle 5$ and $\angle 6$
- C $\angle 7$ and $\angle 9$
- D $\angle 10$ and $\angle 7$

4. Which of the following is a pair of complementary angles?

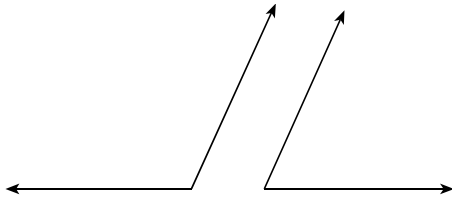
A



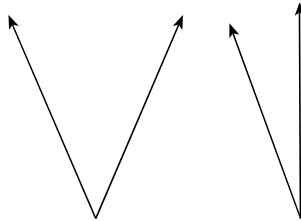
B



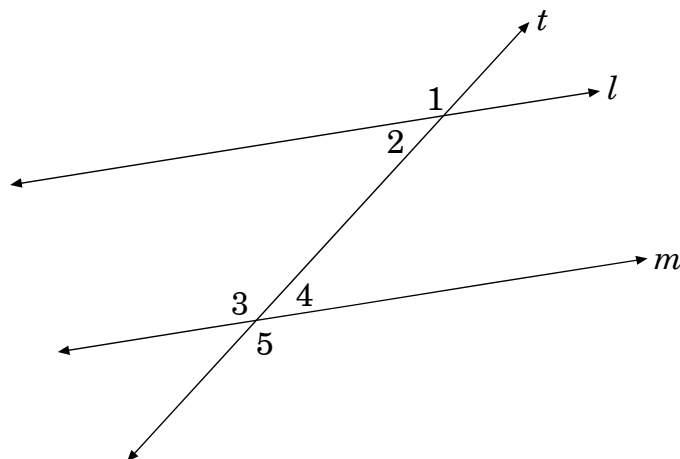
C



D

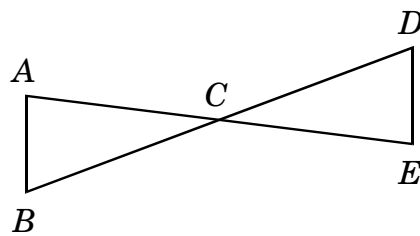


5. If $l \parallel m$, which of the following is a pair of corresponding angles?



- A $\angle 1, \angle 3$
- B $\angle 1, \angle 4$
- C $\angle 2, \angle 3$
- D $\angle 2, \angle 4$
-
6. Which is a correct statement about vertical angles?
- A Vertical angles are always acute.
- B Vertical angles are always congruent.
- C Vertical angles are always supplementary.
- D Vertical angles are always complementary.

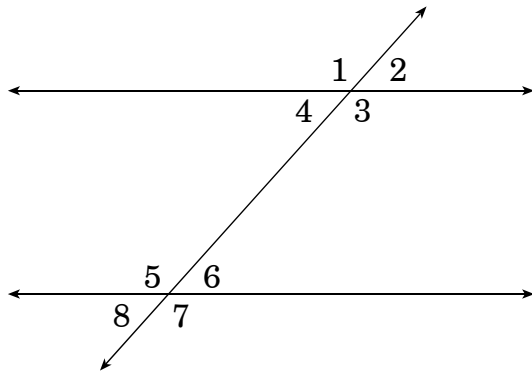
7. Tonya created the following design for her geometry project.



What kind of angles are $\angle ACD$ and $\angle BCE$?

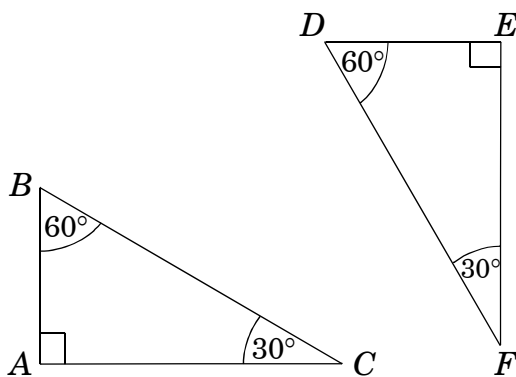
- A complementary angles
- B interior angles
- C supplementary angles
- D vertical angles

8. In this diagram, which is a pair of alternate exterior angles?



- A $\angle 3$ and $\angle 5$
- B $\angle 3$ and $\angle 8$
- C $\angle 1$ and $\angle 7$
- D $\angle 5$ and $\angle 6$

9. Which is a pair of corresponding angles?

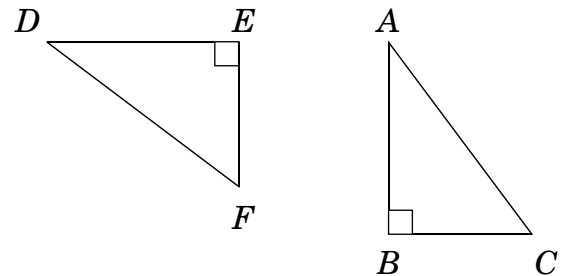


- A $\angle BCA$ and $\angle DFE$
- B $\angle BCA$ and $\angle FDE$
- C $\angle ABC$ and $\angle DEF$
- D $\angle CAB$ and $\angle EDF$

10. $\triangle STU$ is similar to $\triangle XYZ$. What is the relationship between $\angle STU$ and $\angle XYZ$?

- A The measure of $\angle STU$ is half the measure of $\angle XYZ$.
- B The measure of $\angle STU$ is equal to the measure of $\angle XYZ$.
- C The measure of $\angle STU$ is double the measure of $\angle XYZ$.
- D $\angle STU$ and $\angle XYZ$ are complementary.

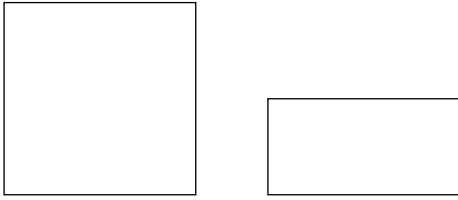
11. If $\triangle DEF$ is congruent to $\triangle ABC$, which angles are corresponding angles?



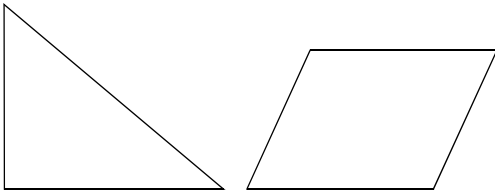
- A $\angle A$ and $\angle D$
- B $\angle B$ and $\angle F$
- C $\angle A$ and $\angle F$
- D $\angle A$ and $\angle E$

12. The school office is making a poster to advertise the mathematics fair. A pair of similar plane figures is needed. Which plane figures are similar?

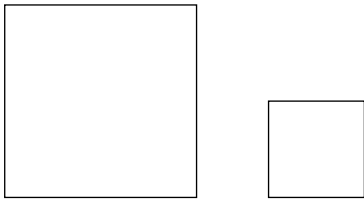
A



B



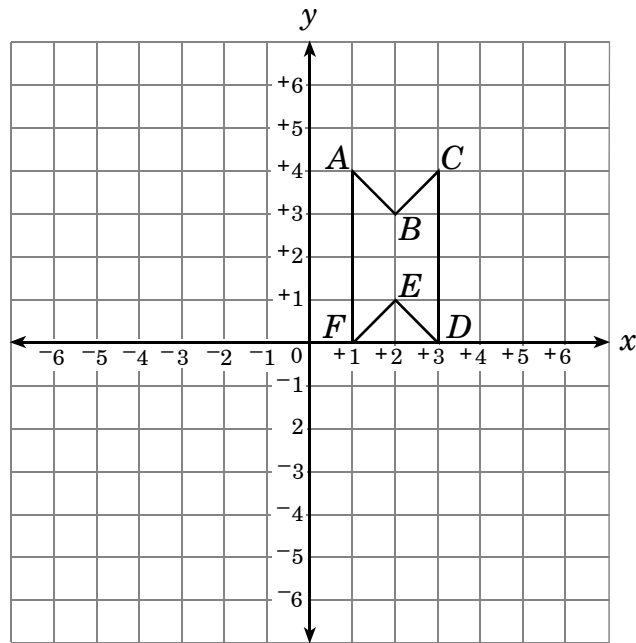
C



D

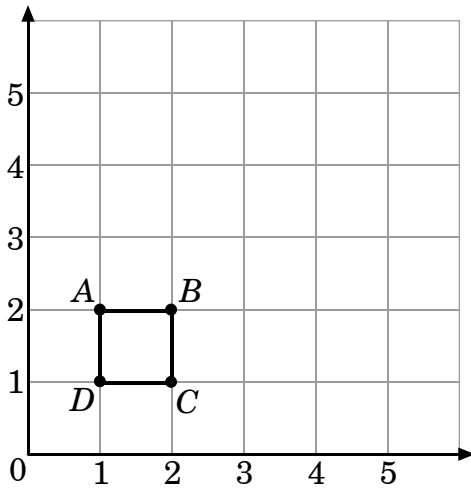


13. If hexagon $ABCDEF$ were translated 2 units up and 4 units right, what would be the coordinates of point C' ?



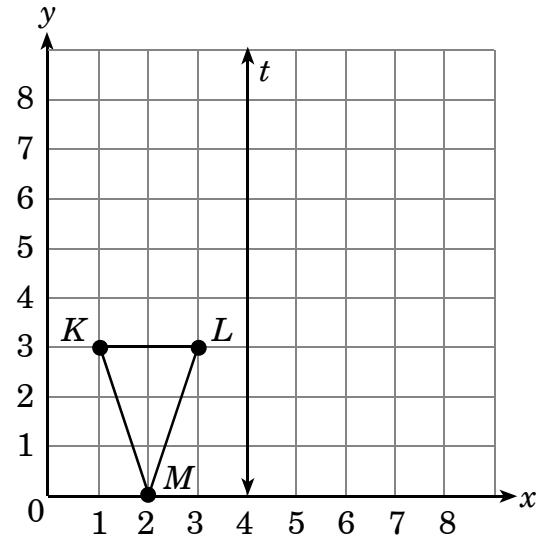
- A (2, 1)
- B (4, 3)
- C (5, 2)
- D (7, 6)

14. Which set of coordinates results from a translation of figure $ABCD$?



- A $A'(2, 7), B'(3, 8), C'(4, 7), D'(3, 6)$
- B $A'(2, 5), B'(2, 8), C'(5, 5), D'(5, 8)$
- C $A'(2, 3), B'(3, 2), C'(4, 4), D'(2, 2)$
- D $A'(1, 4), B'(2, 4), C'(2, 3), D'(1, 3)$

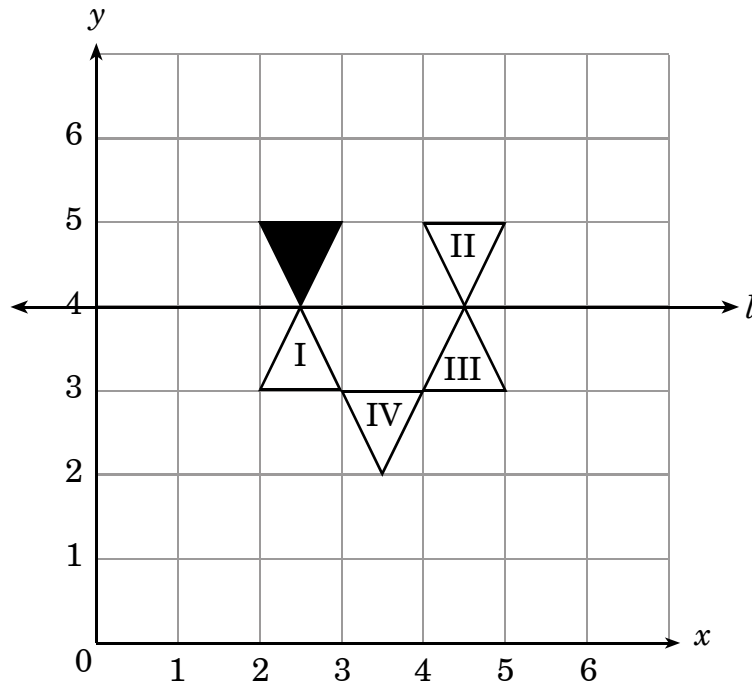
15. The vertices of $\triangle KLM$ are $K(1, 3)$, $L(3, 3)$, and $M(2, 0)$.



What are the coordinates of $\triangle K'L'M'$ when $\triangle KLM$ is reflected over line t ?

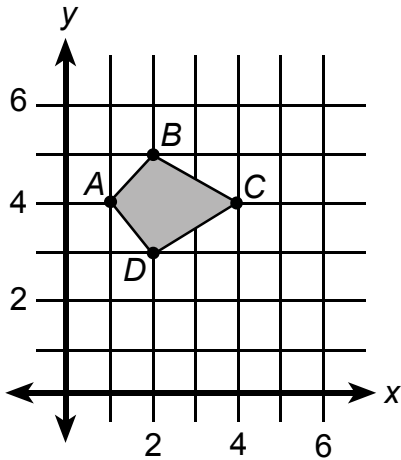
- A $K'(5, 3), L'(3, 3), M'(6, 0)$
- B $K'(7, 3), L'(5, 3), M'(6, 0)$
- C $K'(7, 3), L'(3, 6), M'(6, 0)$
- D $K'(1, 3), L'(3, 3), M'(7, 0)$

16. On the graph, which triangle is a reflection of the shaded triangle over line l ?



- A I
- B II
- C III
- D IV

17. If quadrilateral $ABCD$ were translated 1 unit right and 2 units down, which set of coordinates are the vertices of the new quadrilateral $A'B'C'D'$?



- A $\{(1, 4), (2, 5), (4, 4), (2, 2)\}$
 B $\{(2, 2), (3, 3), (5, 2), (3, 1)\}$
 C $\{(2, 3), (3, 4), (5, 3), (3, 1)\}$
 D $\{(3, 3), (4, 4), (6, 3), (4, 1)\}$
18. A clock has a diameter of 4 inches. How far does the end of the long hand travel during one hour?
- A between 16 and 20 inches
 B about 12 inches
 C between 4 and 10 inches
 D about 4 inches

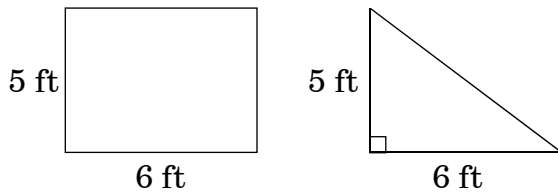
19. The radius of a circular garden is 15 feet. **About** how much fencing will be needed to enclose the garden?

- A 707 feet
 B 94 feet
 C 47 feet
 D 24 feet

20. A triangle has a base of 4 cm and a height of 5 cm. What is the area of a rectangle with the same base and height?

- A 10 cm^2
 B 18 cm^2
 C 20 cm^2
 D 40 cm^2

21. What is true about these two figures?



- A The area of the triangle equals one half the area of the rectangle.
- B The area of the rectangle is three times the area of the triangle.
- C The perimeter of the triangle is greater than the perimeter of the rectangle.
- D The perimeter of the rectangle is twice the perimeter of the triangle.
22. Mr. Potter's farm is currently a rectangle that is 100 meters wide and 300 meters long. If he separates the land into two congruent triangles, what will be the area of each triangle?
- A 1,500 m²
- B 3,000 m²
- C 15,000 m²
- D 30,000 m²

23. What is the area of a quadrilateral that is formed from two triangles with bases of 12 inches and heights of 6 inches?

- A 18 in.²
- B 36 in.²
- C 72 in.²
- D 144 in.²

24. A round cake has a diameter of 8 inches. What is the **approximate** area of the top of the cake?

- A 11 in.²
- B 25 in.²
- C 50 in.²
- D 200 in.²

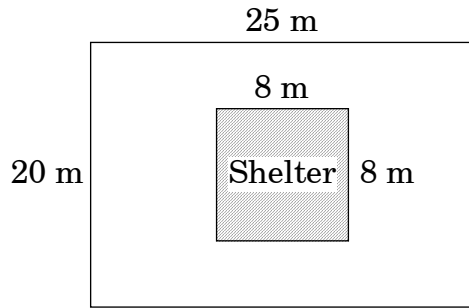
25. The diameter of a jar lid is 5.4 cm. What is the **approximate** area of the top of the lid?

- A 9 cm²
- B 17 cm²
- C 23 cm²
- D 92 cm²

26. A triangular sail is 16 feet tall and has a base of 14 feet. What is the area of the sail?
- A 224 ft²
B 124 ft²
C 121 ft²
D 112 ft²
27. A plant stand has a parallelogram-shaped top with a base of 8 inches and a height of 9.5 inches. What is the area of the top of the plant stand?
- A 152 in.²
B 76 in.²
C 38 in.²
D 35 in.²
28. Wendy jogged for 30 minutes on Friday, 42 minutes on Saturday, and 55 minutes on Sunday. What is the total time she jogged?
- A 1 hr 12 min
B 1 hr 27 min
C 2 hr 7 min
D 2 hr 27 min
29. A dispenser is filled with 20 quarts of fruit juice. After lunch there are only 6 quarts of juice left. How many gallons of juice are left?
- A $3\frac{1}{2}$ gal
B 2 gal
C $1\frac{1}{2}$ gal
D 1 gal
30. Mr. Scott's garden measures 20 yards by 15 yards. If fertilizer comes in 5 lb bags and one bag covers 300 square feet, how many bags will he need to fertilize the entire garden?
- A 1
B 9
C 18
D 54
31. How many 5 oz hamburgers can be made from a package of meat that weighs $3\frac{1}{2}$ lbs?
- A 2
B 11
C 16
D 55

32. A bulletin board measures 37 inches by 25 inches. Which of the following sheets of paper will cover the bulletin board?
- A $30'' \times 30''$
 - B $35'' \times 25''$
 - C $40'' \times 20''$
 - D $40'' \times 30''$
33. In which of these situations is it **most appropriate** to use an estimate?
- A checking the temperature outside to know whether to wear shorts or a sweater
 - B determining the amount of change to give a customer from a \$20 bill
 - C measuring the amount of medicine to give a patient for a cough
 - D timing a race to the hundredth of a second to determine the winner
34. A carton holds 24 boxes of candy. How many cartons are needed to pack 115 boxes of candy?
- A 2
 - B 3
 - C 4
 - D 5
35. A 2-liter container of punch will serve about 8 people. If 38 people are invited to a party, how many 2-liter containers should be bought?
- A 4
 - B 5
 - C 6
 - D 7
36. A swimming pool is 50 meters wide, 25 meters long, and 3 meters deep. A liter of water occupies 0.001 cubic meters. How many liters of water are needed to fill the pool?
- A 375 liters
 - B 3,750 liters
 - C 375,000 liters
 - D 3,750,000 liters
37. Timothy has a fish tank. He wants to know how much water it will take to fill it to $\frac{5}{6}$ of its capacity. He pours 20 quarts of water into the tank and realizes that it is $\frac{1}{6}$ full. How many gallons does he still need?
- A 20 gallons
 - B 45 gallons
 - C 65 gallons
 - D 80 gallons

38. A square picnic shelter is surrounded by a playground.



What is the area of the playground?

- A 58 m^2
- B 436 m^2
- C 500 m^2
- D 564 m^2

39. Andy is building a fence around a rectangular garden 35 m long and 25 m wide. If he sets the posts 5 m apart, how many posts will he need for the fence?

- A 20
- B 24
- C 28
- D 48

End of Goal 2 Sample Items

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Answers to EOG Mathematics Grade 6 Sample Items

Goal 2

1. Objective 2.02

Define and identify interior, exterior, complementary, and supplementary angles and pairs of lines including skew lines.

Thinking Skill: Analyzing

Correct Answer: D

2. Objective 2.02

Define and identify interior, exterior, complementary, and supplementary angles and pairs of lines including skew lines.

Thinking Skill: Knowledge

Correct Answer: A

3. Objective 2.02

Define and identify interior, exterior, complementary, and supplementary angles and pairs of lines including skew lines.

Thinking Skill: Analyzing

Correct Answer: B

4. Objective 2.02

Define and identify interior, exterior, complementary, and supplementary angles and pairs of lines including skew lines.

Thinking Skill: Analyzing

Correct Answer: A

5. Objective 2.03

Define and identify alternate interior, alternate exterior, corresponding and vertical angles.

Thinking Skill: Analyzing

Correct Answer: A

6. Objective 2.03

Define and identify alternate interior, alternate exterior, corresponding and vertical angles.

Thinking Skill: Analyzing

Correct Answer: B

7. Objective 2.03

Define and identify alternate interior, alternate exterior, corresponding and vertical angles.

Thinking Skill: Analyzing

Correct Answer: D

8. Objective 2.03

Define and identify alternate interior, alternate exterior, corresponding and vertical angles.

Thinking Skill: Analyzing

Correct Answer: C

Answers to EOG Mathematics Grade 6 Sample Items

Goal 2

9. Objective 2.04

Identify and distinguish among similar, congruent and symmetric figures; name corresponding parts.

Thinking Skill: Analyzing

Correct Answer: A

10. Objective 2.04

Identify and distinguish among similar, congruent and symmetric figures; name corresponding parts.

Thinking Skill: Analyzing

Correct Answer: B

11. Objective 2.04

Identify and distinguish among similar, congruent and symmetric figures; name corresponding parts.

Thinking Skill: Analyzing

Correct Answer: A

12. Objective 2.04

Identify and distinguish among similar, congruent and symmetric figures; name corresponding parts.

Thinking Skill: Analyzing

Correct Answer: C

13. Objective 2.05

Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in the first quadrant.

Thinking Skill: Integrating

Correct Answer: D

14. Objective 2.05

Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in the first quadrant.

Thinking Skill: Integrating

Correct Answer: D

15. Objective 2.05

Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in the first quadrant.

Thinking Skill: Integrating

Correct Answer: B

16. Objective 2.05

Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in the first quadrant.

Thinking Skill: Analyzing

Correct Answer: A

Answers to EOG Mathematics Grade 6 Sample Items

Goal 2

17. Objective 2.05

Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in the first quadrant.

Thinking Skill: Analyzing **Correct Answer:** B

18. Objective 2.06

Investigate and determine the relationship between the diameter and circumference of a circle and the value of pi; calculate the circumference of a circle.

Thinking Skill: Applying **Correct Answer:** B

19. Objective 2.06

Investigate and determine the relationship between the diameter and circumference of a circle and the value of pi; calculate the circumference of a circle.

Thinking Skill: Applying **Correct Answer:** B

20. Objective 2.07

Identify the relationship between areas of triangles and rectangles with the same base and height.

Thinking Skill: Analyzing **Correct Answer:** C

21. Objective 2.07

Identify the relationship between areas of triangles and rectangles with the same base and height.

Thinking Skill: Analyzing **Correct Answer:** A

22. Objective 2.07

Identify the relationship between areas of triangles and rectangles with the same base and height.

Thinking Skill: Applying **Correct Answer:** C

23. Objective 2.09

Calculate areas of triangles, parallelograms and circles.

Thinking Skill: Applying **Correct Answer:** C

24. Objective 2.09

Calculate areas of triangles, parallelograms and circles.

Thinking Skill: Applying **Correct Answer:** C

Answers to EOG Mathematics Grade 6 Sample Items

Goal 2

- 25. Objective 2.09**
Calculate areas of triangles, parallelograms and circles.
Thinking Skill: Applying **Correct Answer:** C
- 26. Objective 2.09**
Calculate areas of triangles, parallelograms and circles.
Thinking Skill: Applying **Correct Answer:** D
- 27. Objective 2.09**
Calculate areas of triangles, parallelograms and circles.
Thinking Skill: Applying **Correct Answer:** B
- 28. Objective 2.11**
Convert measures of length, area, capacity, weight and time expressed in a given unit to other units in the same measurement system.
Thinking Skill: Integrating **Correct Answer:** C
- 29. Objective 2.11**
Convert measures of length, area, capacity, weight and time expressed in a given unit to other units in the same measurement system.
Thinking Skill: Integrating **Correct Answer:** C
- 30. Objective 2.11**
Convert measures of length, area, capacity, weight and time expressed in a given unit to other units in the same measurement system.
Thinking Skill: Integrating **Correct Answer:** B
- 31. Objective 2.11**
Convert measures of length, area, capacity, weight and time expressed in a given unit to other units in the same measurement system.
Thinking Skill: Applying **Correct Answer:** B
- 32. Objective 2.12**
Estimate solutions to problems involving geometry and measurement.
Determine when estimates are sufficient for the measurement situation.
Thinking Skill: Analyzing **Correct Answer:** D
- 33. Objective 2.12**
Estimate solutions to problems involving geometry and measurement.
Determine when estimates are sufficient for the measurement situation.
Thinking Skill: Analyzing **Correct Answer:** A
-

Answers to EOG Mathematics Grade 6 Sample Items

Goal 2

34. Objective 2.12

Estimate solutions to problems involving geometry and measurement.
Determine when estimates are sufficient for the measurement situation.

Thinking Skill: Applying **Correct Answer:** D

35. Objective 2.12

Estimate solutions to problems involving geometry and measurement.
Determine when estimates are sufficient for the measurement situation.

Thinking Skill: Applying **Correct Answer:** B

36. Objective 2.13

Analyze problem situations, select appropriate strategies, and use an organized approach to solve non-routine and increasingly complex problems involving geometry and measurement. Use technology as appropriate.

Thinking Skill: Integrating **Correct Answer:** D

37. Objective 2.13

Analyze problem situations, select appropriate strategies, and use an organized approach to solve non-routine and increasingly complex problems involving geometry and measurement. Use technology as appropriate.

Thinking Skill: Applying **Correct Answer:** A

38. Objective 2.13

Analyze problem situations, select appropriate strategies, and use an organized approach to solve non-routine and increasingly complex problems involving geometry and measurement. Use technology as appropriate.

Thinking Skill: Applying **Correct Answer:** B

39. Objective 2.13

Analyze problem situations, select appropriate strategies, and use an organized approach to solve non-routine and increasingly complex problems involving geometry and measurement. Use technology as appropriate.

Thinking Skill: Integrating **Correct Answer:** B