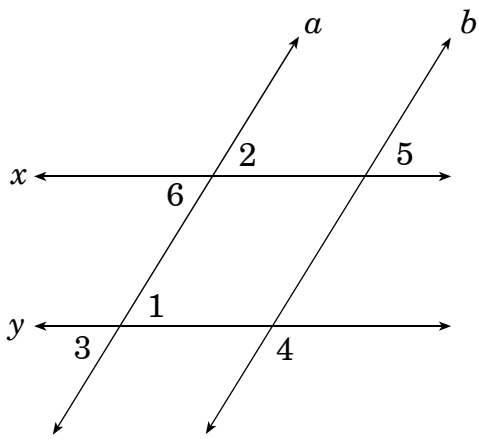


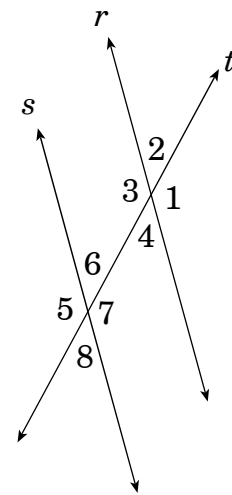
1.



If $x \parallel y$ and $a \parallel b$, then which pair of numbered angles must be supplementary?

- A $\angle 1$ and $\angle 2$
- B $\angle 2$ and $\angle 4$
- C $\angle 3$ and $\angle 5$
- D $\angle 3$ and $\angle 6$

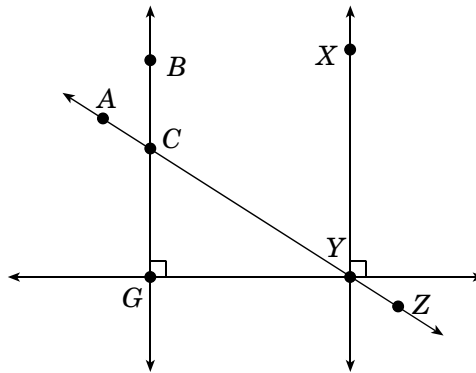
2.



If $r \parallel s$, then which angles must be congruent?

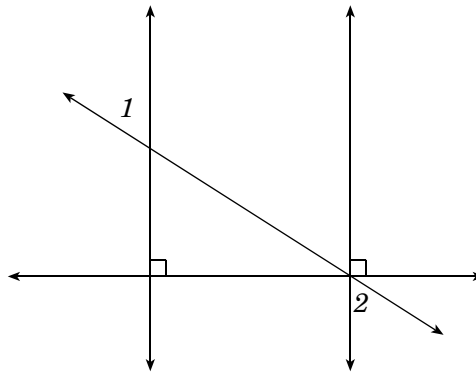
- A $\angle 1$ and $\angle 2$
- B $\angle 2$ and $\angle 3$
- C $\angle 4$ and $\angle 5$
- D $\angle 6$ and $\angle 4$

3. If the measure of $\angle ACB$ is 45° , then what is the measure of $\angle XYZ$?



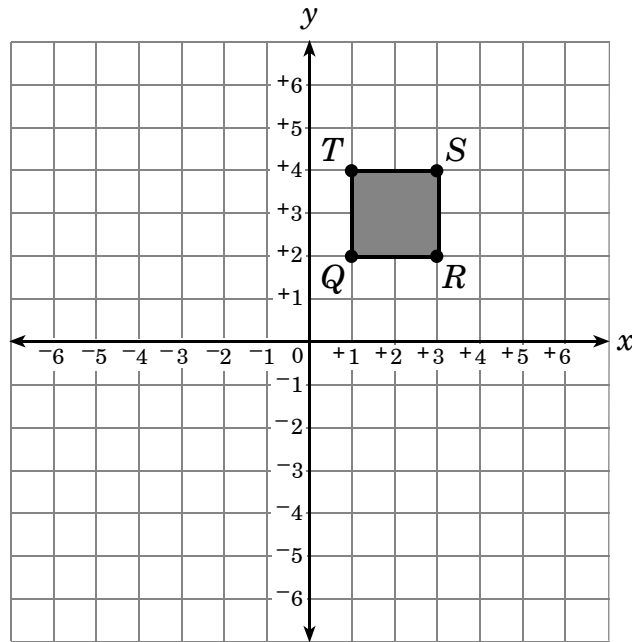
- A 45°
 B 90°
 C 135°
 D 140°

4. If the measure of $\angle 1$ is 45° , then what is the measure of $\angle 2$?



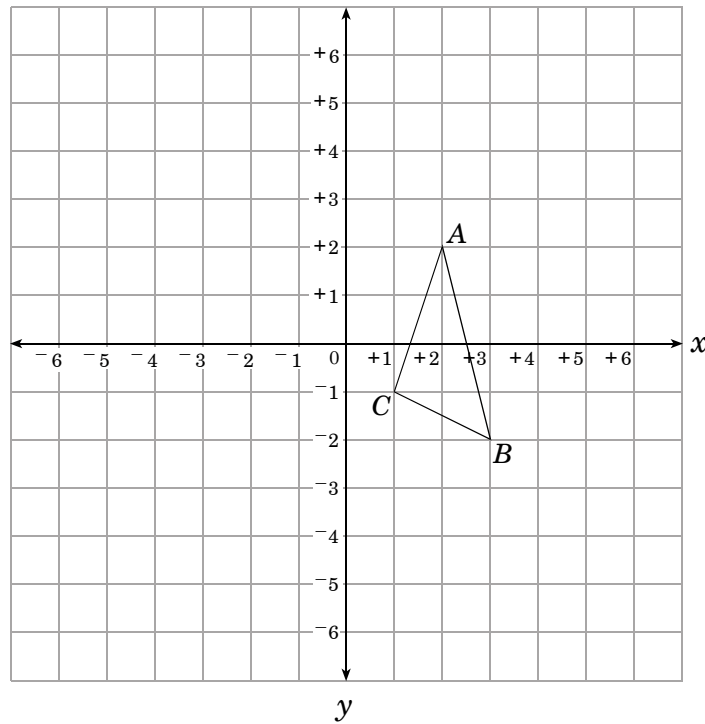
- A 45°
 B 50°
 C 90°
 D 135°

5. If quadrilateral $QRST$ is reflected across the y -axis, what will be the coordinates of point Q' ?



- A $(-2, 4)$
- B $(-2, 1)$
- C $(-1, 2)$
- D $(-1, 4)$

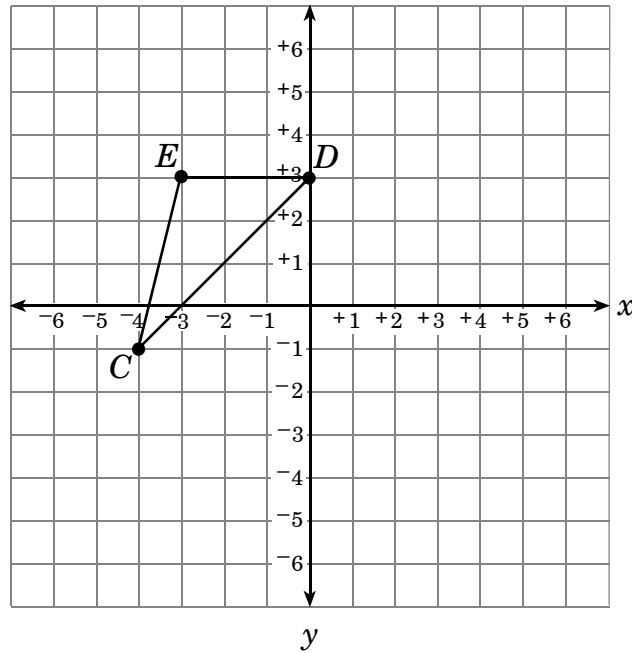
6. The diagram shows triangle ABC .



Which set of coordinates defines the reflection of triangle ABC over the y -axis?

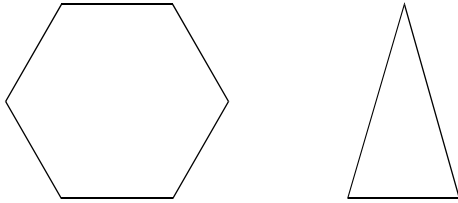
- A $\{(-2, 2), (-1, -2), (-3, -1)\}$
- B $\{(-2, 2), (-3, -2), (-1, -1)\}$
- C $\{(2, -2), (3, 2), (1, 1)\}$
- D $\{(2, -2), (-2, -3), (-1, -1)\}$

7. If $\triangle CDE$ is translated +3 units in the x direction and -2 units in the y direction, what will be the coordinates of point D' ?



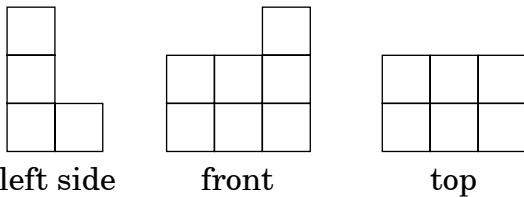
- A (3,1)
- B (-3,1)
- C (-2,0)
- D (-2,6)

8. Janelle cut out and pasted together copies of the pattern pieces below.



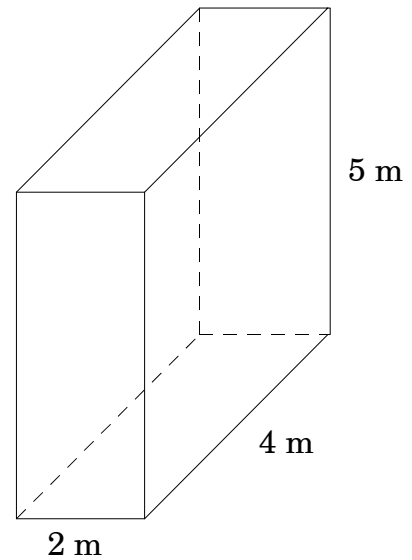
What three-dimensional figure could be formed?

- A triangular pyramid
 B triangular prism
 C hexagonal pyramid
 D hexagonal prism
9. What is the **least** number of cubes needed to form a three-dimensional figure with the given left side, front, and top views?



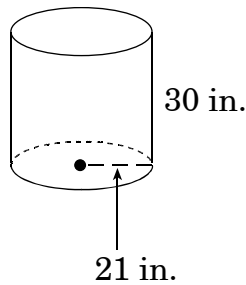
- A 4 cubes
 B 6 cubes
 C 7 cubes
 D 10 cubes

10. What is the total surface area of the rectangular solid?

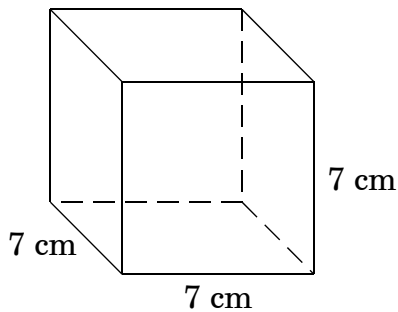


- A 38 m^2
 B 40 m^2
 C 60 m^2
 D 76 m^2

11. What is the **approximate** surface area of the can?



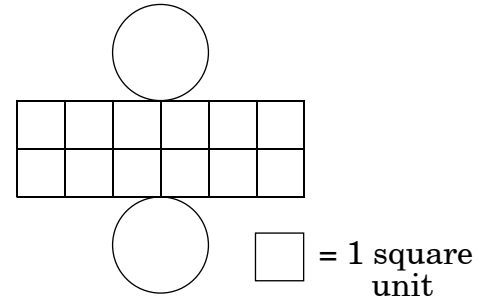
- A 1,980 in.²
 B 5,103 in.²
 C 5,340 in.²
 D 6,726 in.²
12. Donna has a cube that measures 7 cm on each edge.



What is the surface area of the cube?

- A 343 cm²
 B 294 cm²
 C 49 cm²
 D 21 cm²

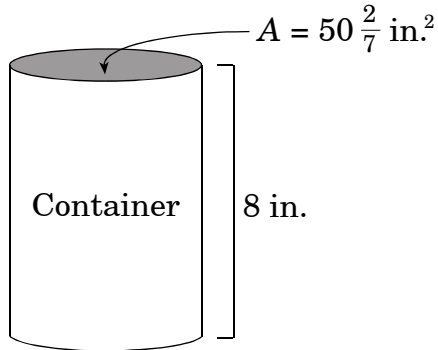
13. A can is made from a pattern like the one below.



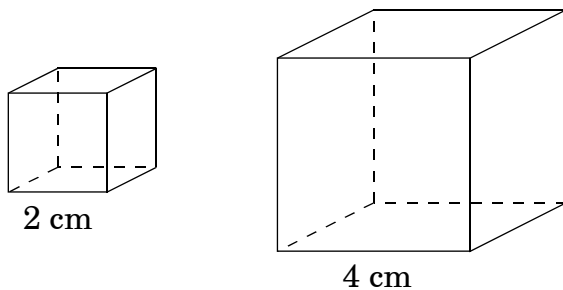
The area of the top circle is about 5.3 square units. What is the surface area of the can?

- A 22.6 square units
 B 34.2 square units
 C 41.3 square units
 D 63.6 square units

14. The volume of a can of paint is $67\frac{1}{21}$ in.³ What is the **minimum** number of cans needed to fill the container below?



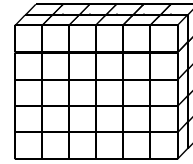
- A 3
B 4
C 5
D 6
15. These two cubes have sides 2 cm and 4 cm, respectively.



What is the ratio of their volumes?

- A 1 to 2
B 1 to 4
C 1 to 8
D 1 to 16

16. What is the volume of the rectangular prism?



- A 30 units³
B 50 units³
C 55 units³
D 60 units³
17. The Johnsons have built a rectangular swimming pool that is 4 feet 10 inches deep everywhere. They need to know the volume to determine the amount of chemicals to put into the water. The pool is 20 feet wide and 41 feet long. What is the **approximate** volume of the pool?
- A 2,880 cubic feet
B 3,200 cubic feet
C 3,600 cubic feet
D 4,000 cubic feet

18. A rectangular-shaped sandbox is 15 ft long by 5 ft wide by 6 inches deep. How much sand would be needed to fill the sandbox?

A 37.5 cubic feet
B 75 cubic feet
C 150 cubic feet
D 450 cubic feet

19. What is the volume of a rectangular solid with a length of eight inches, width of six inches, and height of three inches?

A 120 in.³
B 124 in.³
C 144 in.³
D 180 in.³

20. If a waterbed is 83 in. × 67 in. × 9 in., **approximately** how many cubic inches of water will it hold when filled?

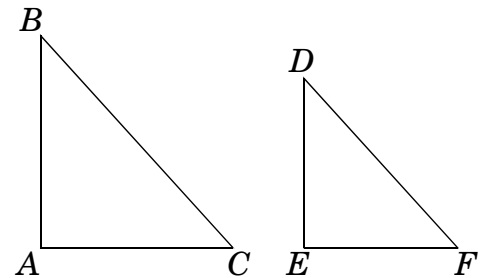
A 160 in.³
B 5,000 in.³
C 43,000 in.³
D 50,000 in.³

21. If the length of a rectangle is doubled, what will happen to its area?

A The area will be the same.
B The area will be twice as large.
C The area will be three times as large.
D The area will be four times as large.

22. If $\triangle ABC \sim \triangle EDF$, which of the following completes this proportion?

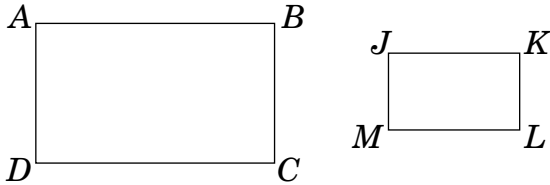
$$\frac{AB}{ED} = \frac{AC}{?}$$



A EF
B DF
C BC
D ED

23. If figure $ABCD \sim$ figure $JKLM$, which of the following completes this proportion?

$$\frac{AD}{JM} = \frac{BC}{?}$$



- A KL
- B LM
- C MJ
- D JK

End of Goal 2 Sample Items

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Answers to EOG Mathematics Grade 7 Sample Items

Goal 2

- Objective 2.02**
Identify the congruent and supplementary relationships of the angles formed by cutting parallel lines by a transversal.
Thinking Skill: Analyzing **Correct Answer:** B
- Objective 2.02**
Identify the congruent and supplementary relationships of the angles formed by cutting parallel lines by a transversal.
Thinking Skill: Analyzing **Correct Answer:** D
- Objective 2.02**
Identify the congruent and supplementary relationships of the angles formed by cutting parallel lines by a transversal.
Thinking Skill: Analyzing **Correct Answer:** C
- Objective 2.02**
Identify the congruent and supplementary relationships of the angles formed by cutting parallel lines by a transversal.
Thinking Skill: Analyzing **Correct Answer:** A
- Objective 2.03**
Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in all quadrants of the coordinate plane.
Thinking Skill: Analyzing **Correct Answer:** C
- Objective 2.03**
Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in all quadrants of the coordinate plane.
Thinking Skill: Analyzing **Correct Answer:** B
- Objective 2.03**
Locate, give the coordinates of, and graph plane figures which are the results of translations or reflections in all quadrants of the coordinate plane.
Thinking Skill: Analyzing **Correct Answer:** A
- Objective 2.05**
Build models of three-dimensional figures given end, side and top views.
Thinking Skill: Analyzing **Correct Answer:** C

Answers to EOG Mathematics Grade 7 Sample Items

Goal 2

9. **Objective 2.05**
Build models of three-dimensional figures given end, side and top views.
Thinking Skill: Analyzing **Correct Answer:** D
10. **Objective 2.07**
Use models to find the surface area of rectangular solids and cylinders.
Thinking Skill: Applying **Correct Answer:** D
11. **Objective 2.07**
Use models to find the surface area of rectangular solids and cylinders.
Thinking Skill: Applying **Correct Answer:** D
12. **Objective 2.07**
Use models to find the surface area of rectangular solids and cylinders.
Thinking Skill: Applying **Correct Answer:** B
13. **Objective 2.07**
Use models to find the surface area of rectangular solids and cylinders.
Thinking Skill: Applying **Correct Answer:** A
14. **Objective 2.08**
Use models to find the volume of prisms and cylinders.
Thinking Skill: Applying **Correct Answer:** D
15. **Objective 2.09**
Calculate the volume of rectangular solids.
Thinking Skill: Applying **Correct Answer:** C
16. **Objective 2.09**
Calculate the volume of rectangular solids.
Thinking Skill: Applying **Correct Answer:** D
17. **Objective 2.09**
Calculate the volume of rectangular solids.
Thinking Skill: Applying **Correct Answer:** D

Answers to EOG Mathematics Grade 7 Sample Items

Goal 2

18. **Objective 2.09**
Calculate the volume of rectangular solids.
Thinking Skill: Applying **Correct Answer:** A
19. **Objective 2.09**
Calculate the volume of rectangular solids.
Thinking Skill: Applying **Correct Answer:** C
20. **Objective 2.09**
Calculate the volume of rectangular solids.
Thinking Skill: Applying **Correct Answer:** D
21. **Objective 2.10**
Recognize the effect on the area and perimeter when one or two dimensions of a plane figure are changed.
Thinking Skill: Knowledge **Correct Answer:** B
22. **Objective 2.11**
Use proportions to express relationships between corresponding parts of similar figures.
Thinking Skill: Analyzing **Correct Answer:** A
23. **Objective 2.11**
Use proportions to express relationships between corresponding parts of similar figures.
Thinking Skill: Analyzing **Correct Answer:** A