

Geometry Final Exam Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- B 1. The sum of the angle measures of a polygon with s sides is 2520. Find s .

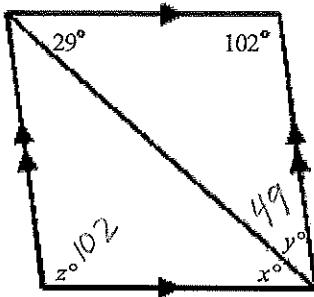
$$(n-2)(180) = 2520$$

- a. 14 b. 16 c. 18 d. 15

- C 2. A road sign is in the shape of a regular heptagon. What is the measure of each angle on the sign? Round to the nearest tenth.

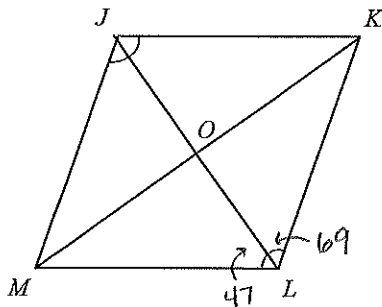
- a. 900 b. 231.4 c. 128.6 d. 64.3

- D 5. Find the values of the variables in the parallelogram. The diagram is not to scale.



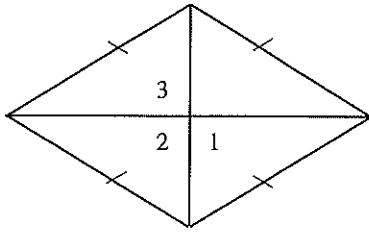
- a. $x = 49, y = 29, z = 102$ ~~c. $x = 49, y = 49, z = 131$~~
 b. $x = 29, y = 49, z = 131$ d. $x = 29, y = 49, z = 102$

- C 6. In the parallelogram, $m\angle KLO = 69$ and $m\angle MLO = 47$. Find $m\angle KJM$. The diagram is not to scale.



- a. 69 b. 106 c. 116 d. 64

- C 10. In the rhombus, $m\angle 1 = 18x$, $m\angle 2 = x + y$, and $m\angle 3 = 30z$. Find the value of each variable. The diagram is not to scale.



$$18x = 90$$

$$x = 5$$

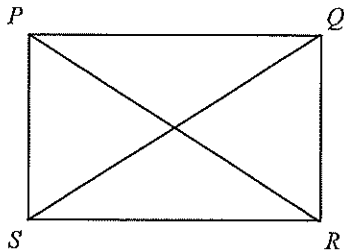
$$5 + y = 90$$

$$y = 85$$

- ~~a.~~ $x = 10, y = 85, z = 6$
~~b.~~ $x = 5, y = 175, z = 6$

- c. $x = 5, y = 85, z = 3$
~~d.~~ $x = 10, y = 175, z = 3$

- A 11. In rectangle $PQRS$, $PR = 18x - 24$ and $QS = x + 146$. Find the value of x and the length of each diagonal.



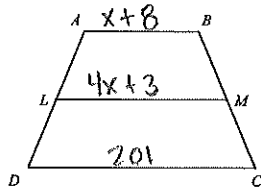
$$18x - 24 = x + 146$$

$$17x = 170$$

- ~~a.~~ $x = 10, PR = 156, QS = 156$
~~b.~~ $x = 10, PR = 78, QS = 78$

- ~~c.~~ $x = 5, PR = 151, QS = 151$
~~d.~~ $x = 11, PR = 174, QS = 174$

- B 12. \overline{LM} is the midsegment of $\square ABCD$. $AB = x + 8$, $LM = 4x + 3$, and $DC = 201$. What is the value of x ?



$$\frac{x + 8 + 201}{2} = 4x + 3$$

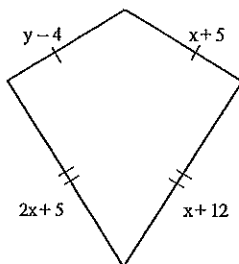
$$x + 209 = 8x + 6$$

$$7x = 203$$

- ~~a.~~ 33 (b.) 29

- ~~c.~~ 238 ~~d.~~ 37

- C 13. Find the values of the variables and the lengths of the sides of this kite.



$$2x + 5 = x + 12$$

$$x = 7$$

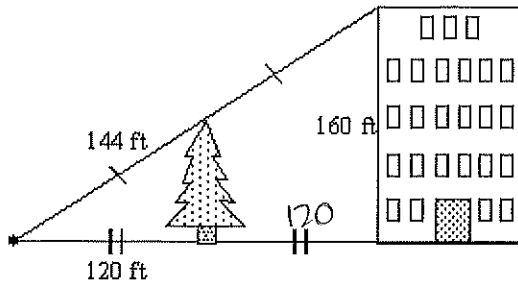
$$y - 4 = 12$$

$$y = 16$$

- ~~a.~~ $x = 7, y = 16; 3, 21$
~~b.~~ $x = 16, y = 7; 12, 12$

- ~~c.~~ $x = 7, y = 16; 12, 19$
 d. $x = 16, y = 7; 3, 21$

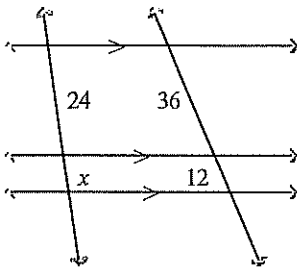
- A 20. Use the information in the diagram to determine the height of the tree to the nearest foot.



$$\frac{160}{240} = \frac{x}{120}$$

- a. 80 ft b. 264 ft c. 60 ft d. 72 ft

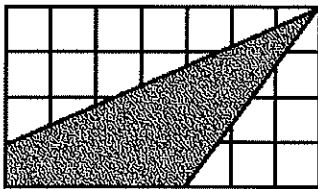
- A 23. What is the value of x ?



$$\frac{24}{x} = \frac{36}{12}$$

- a. 8 b. 12 c. 6 d. 2

24. The figure is drawn on centimeter grid paper. Find the perimeter of the shaded figure to the nearest tenth.



omit

- a. 17.6 cm b. 10.8 cm c. 15.6 cm d. 18.0 cm

$$28^2 + 4^2 = 31^2$$

- A 25. A triangle has side lengths of 28 in, 4 in, and 31 in. Classify it as acute, obtuse, or right.
a. obtuse b. right c. acute

$$800 < 961$$

26. Quilt squares are cut on the diagonal to form triangular quilt pieces. The hypotenuse of the resulting triangles is 10 inches long. What is the side length of each piece?

- a. 5 c. $5\sqrt{3}$
b. $5\sqrt{2}$ d. $10\sqrt{2}$

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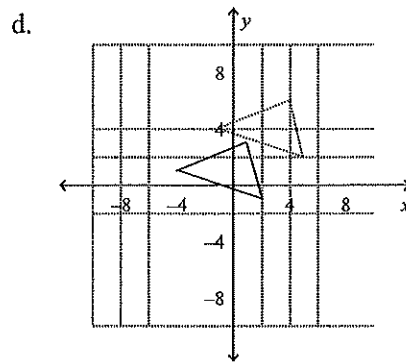
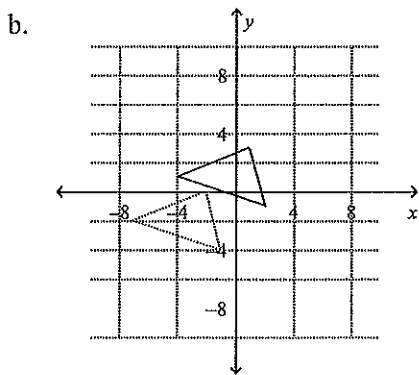
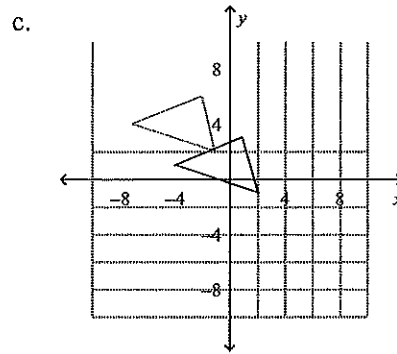
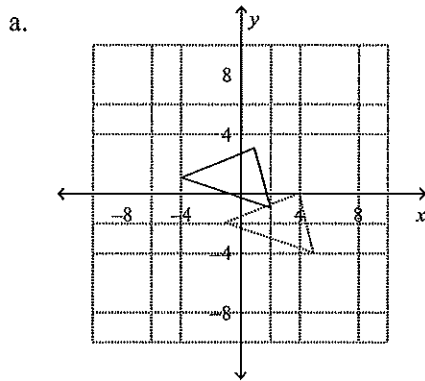
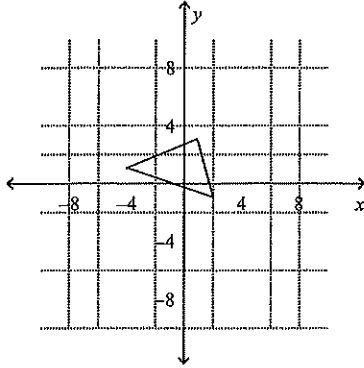
27. The length of the hypotenuse of a $30^\circ-60^\circ-90^\circ$ triangle is 4. Find the perimeter.

- a. $4 + 12\sqrt{3}$ c. $2 + 6\sqrt{3}$
b. $6 + 2\sqrt{3}$ d. $12 + 4\sqrt{3}$

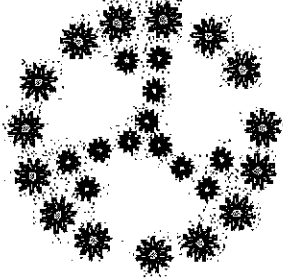
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C

32. What image is the translation of the shown triangle given by the translation rule $(x, y) \rightarrow (x - 3, y + 3)$?



37. If the figure has rotational symmetry, find the angle of rotation about the center that results in an image that matches the original figure.

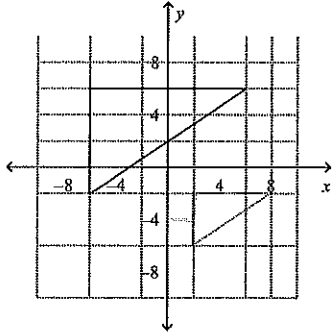


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- a. 90° b. 120° c. 210° d. no rotational symmetry

D

38. The dashed-lined triangle is a dilation image of the solid-lined triangle. Is the dilation an enlargement or a reduction? What is the scale factor of the dilation?

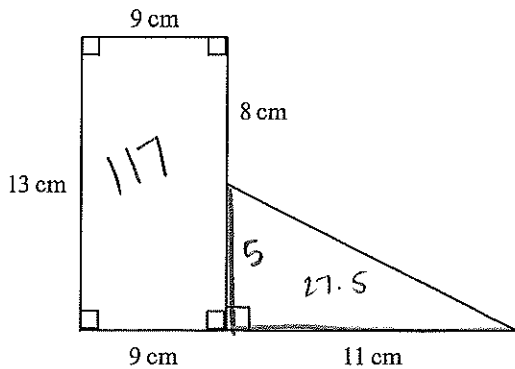


- a. reduction; 2 b. reduction; $\frac{1}{4}$ c. enlargement; 2 d. reduction; $\frac{1}{2}$

Find the area. The figure is not drawn to scale.

A

39.



- a. 144.5 cm^2 b. 127 cm^2 c. 172 cm^2 d. 50 cm^2

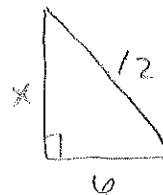
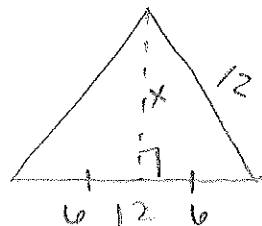
A

41. Find the area of an equilateral triangle with a side of 12.

- a. $36\sqrt{3}$ b. 72 c. 36 d. $3\sqrt{3}$

$$A = \frac{1}{2} \cdot b \cdot h$$

$$= \frac{1}{2} \cdot 12 \cdot 10.4$$

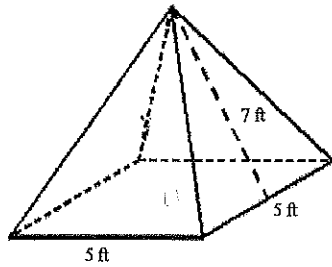


$$6^2 + x^2 = 12^2$$

$$x = 10.4$$

Find the surface area of the pyramid shown to the nearest whole number.

B 47.

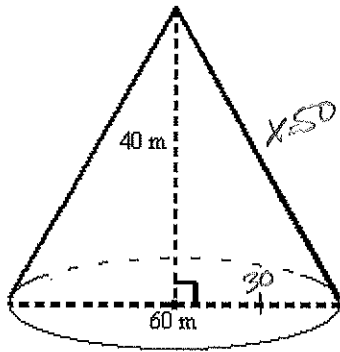


Not drawn to scale

base: 5×5
 sides: $4 \times (\frac{1}{2} \cdot 5 \cdot 7)$

- a. 165 ft^2 b. 95 ft^2 c. 70 ft^2 d. 28 ft^2

C 48. Find the lateral area of the cone to the nearest whole number.

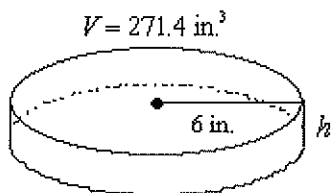


Not drawn to scale

$= \pi \cdot r \cdot l$
 $= 3.14 \cdot 30 \cdot 50$

- a. 7540 m^2 b. 3770 m^2 c. 4712 m^2 d. 9425 m^2

A 49. Find the height of the cylinder.



$V = \pi r^2 h$
 $271.4 = (3.14)(6^2)(h)$

- a. 2.4 in. b. 7.2 in. c. 14.4 d. 4.8 in.