

Key

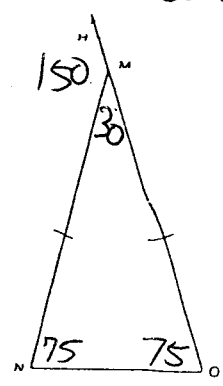
Name _____

Date _____

GeoCl Sem1 review
Unit 3

- 1. In the isosceles triangle shown below, the measure of the exterior angle $\angle HMN$ is 150° . What is the measure of $\angle O$?

$m\angle M = 180 - 150 = 30^\circ$
 $m\angle N + m\angle O = 150^\circ$
 $m\angle N = m\angle O = 75^\circ$

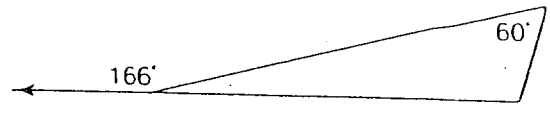


- 2. Which of the following cannot be the lengths of the three sides of a triangle?



- 3. Classify the triangle drawn below.

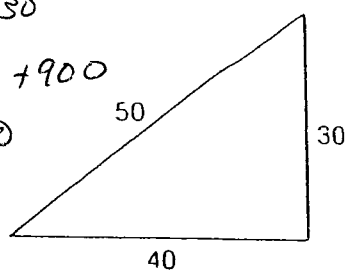
obtuse
scalene



- 4. Classify the triangle drawn below.

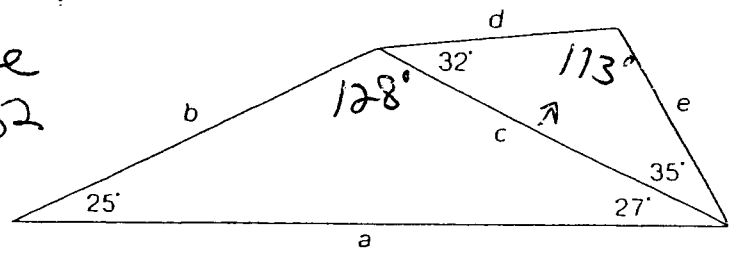
right scalene

$50^2 = 40^2 + 30^2$
 $2500 = 1600 + 900$
 $2500 = 2500$



- 5. List the sides of the triangles shown below in order from greatest to least.

113 d e
 35 32
 a b c
 128 27 25



a, b, c, d, e

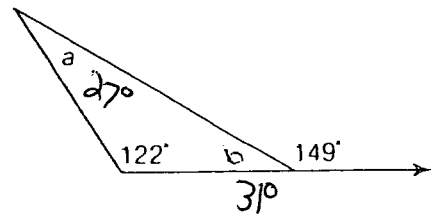
6. Solve for a in the diagram shown below.

$$180 - 122 - 31 \quad a = 27^\circ$$

$$180 - 153 = 27$$

Solve for b.

$$180 - 149 = 31^\circ$$

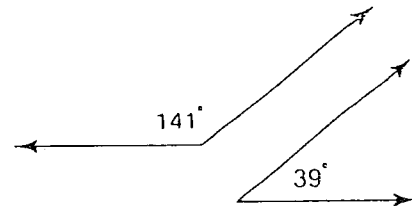


7. Complete the sentence. Vertical angles are: congruent.

8. Classify the pair of angles in the diagram shown below.

$$141 + 39 = 180^\circ$$

They are supplementary angles

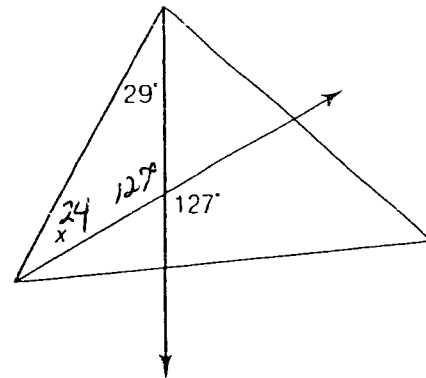


9. Solve for x in the diagram at the right.

$$x = 180^\circ - 127^\circ - 29^\circ$$

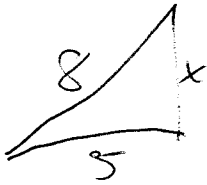
$$x = 180^\circ - 156^\circ$$

$$x = 24^\circ$$



Know your vocabulary!

1. A right triangle has a hypotenuse with a length of 8 inches and a leg with a length of 5 inches. What is the length of the other leg?



$$8^2 - 5^2 = x^2$$

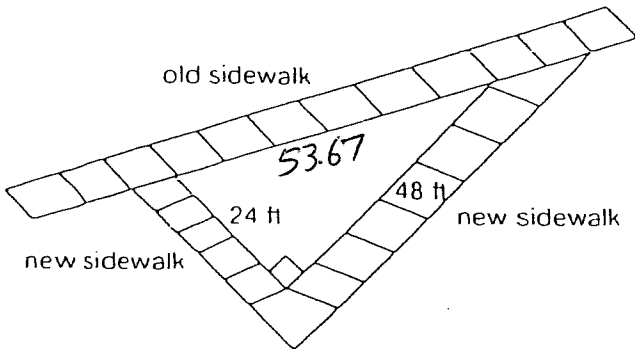
$$64 - 25 = x^2$$

$$39 = x^2$$

$$x = \sqrt{39}$$

$$x \approx 6.245 \text{ inches}$$

2. The parks and recreation organization has decided to add a sidewalk around a big oak tree in the park. They are hoping that this will decrease the amount of foot traffic in front of the tree. A diagram showing the old and new sidewalks is shown below.



$$24 + 48 = 72 \text{ ft}$$

$$72 - 53.67$$

$$18.33 \text{ ft}$$

in addition to the old path

About how many additional feet will a person travel if they walk along the new path?

$$x^2 = 24^2 + 48^2$$

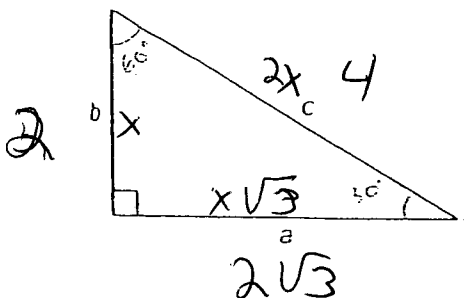
$$x^2 = 576 + 2304$$

$$x^2 = 2880$$

$$x = \sqrt{2880}$$

$$x \approx 53.67 \text{ ft}$$

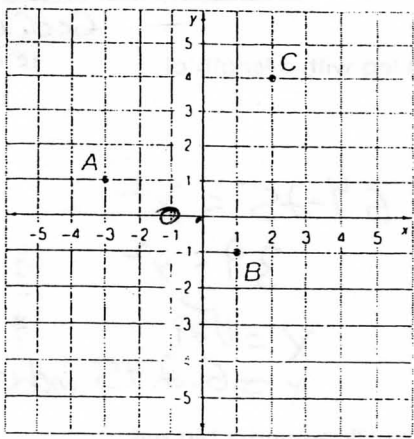
3. In the triangle shown below, $a = 2\sqrt{3}$. What is the value of b ?



$$b = 2$$

$$c = 4$$

4. What is the midpoint of the line segment that connects points A and B?



C (2, 4)

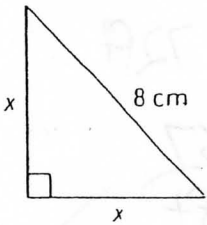
B (1, -1)

A (-3, 1)

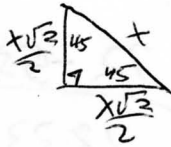
m.p. of

$\overline{AB} = (-1, 0)$

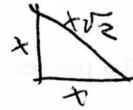
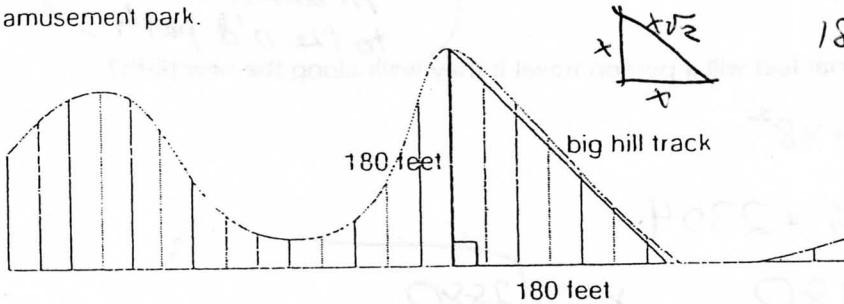
5. In the triangle shown below, what is the value of x?



$\frac{8\sqrt{2}}{2} = 4\sqrt{2} \approx 5.6568 \text{ cm}$



6. The drawing below shows the plan for the big hill on a new roller coaster at an amusement park.



$180\sqrt{2} \approx$

254.56 ft

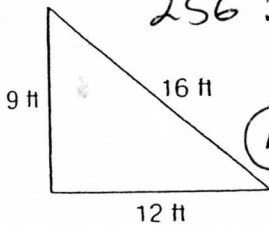
Which is the approximate length of the hill?

254.56 ft

Use the Pythagorean Theorem to find the figure that is a right triangle.

7.

a.

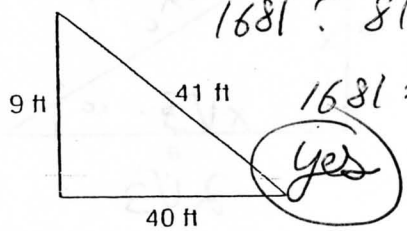


$256 ? 81 + 144$

$256 \neq 225$

(no)

b.

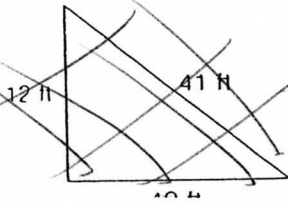


$1681 ? 81 + 1600$

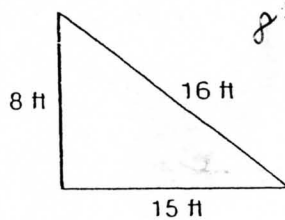
$1681 = 1681$

(yes)

c.



d.



$8^2 + 15^2 \neq 16$

$289 \neq 256$