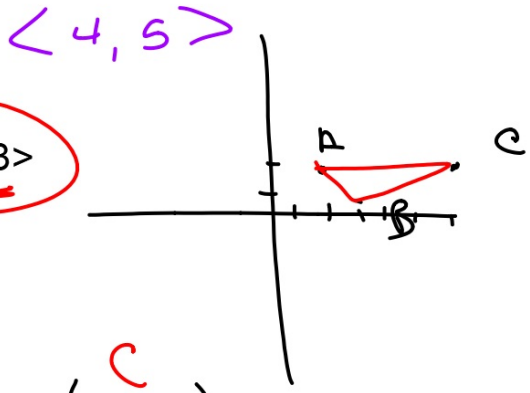
Geometry
Review Ch. 8
translation vector <-2, 3>

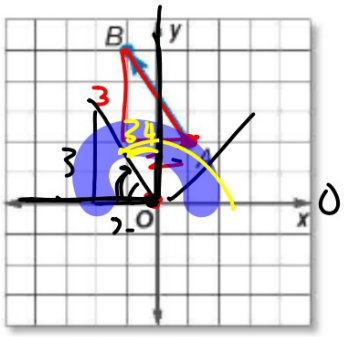


Quiz 8.7
Test Ch. 8 is Tues.

A B C
(2,2) (3,1) (6,2)
-2 3 -2 3 -2 3
∴ (0,5) (1,4) (4,5)

Example 8

Find the magnitude and direction of $\overrightarrow{AB}$ for $A(1, 2)$ and $B(-1, 5)$.



$2^2 + 3^2 = h^2$

$4 + 9 = h^2$

$13 = h^2$

$\sqrt{13} = h$

$\approx 3.6 = h$

$\tan\left(\frac{3}{2}\right)$

$56°$

$124°$ from horz.

124 "

$56°$ N of W

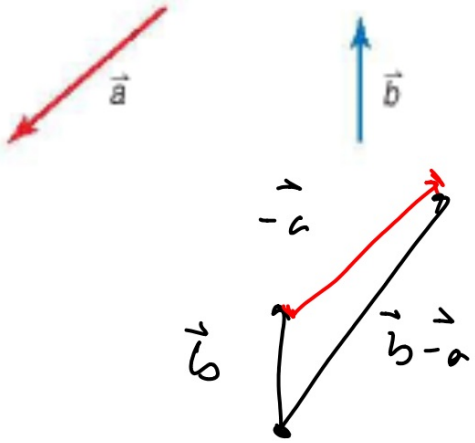
$a+b \stackrel{?}{=} b+a$

tracing paper

40. Copy the vectors to find $\vec{a} + \vec{b}$.

$\vec{b} - \vec{a}$

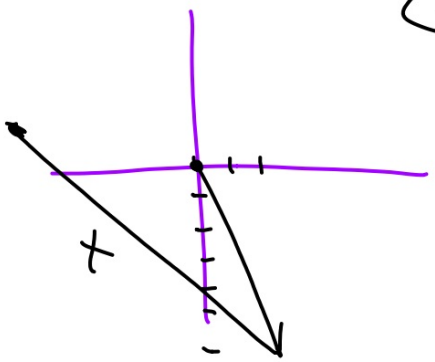
$b + -a$



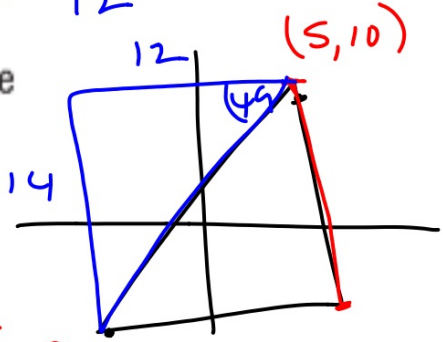
algebraically

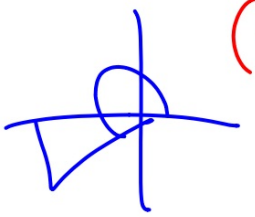
41. Given that $\vec{s}$ is $\langle 2, -6 \rangle$ and $\vec{t}$ is $\langle -10, 7 \rangle$, find the component form of $\vec{s} + \vec{t}$.

$\langle -8, 1 \rangle$



$\tan \frac{14}{12}$





229°
49° S of W

8-1 Geometric Mean

Find the geometric mean between each pair of numbers.

11. 9 and 4

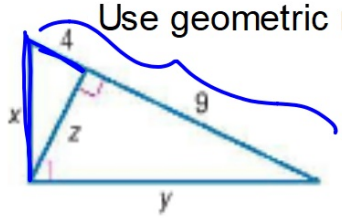
12. $\sqrt{20}$ and $\sqrt{80}$

$$\frac{x}{9} = \frac{4}{x}$$

$$x^2 = 36$$

$$x = \pm 6$$

14. Find x, y, and z.



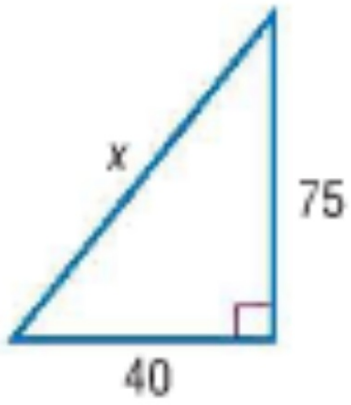
Use geometric mean

$$\frac{z}{9} = \frac{4}{z} \qquad \frac{x}{4} = \frac{13}{x}$$

$\therefore$

15. **DANCES** Mike is hanging a string of lights on his barn for a square dance. Using a book to sight the top and bottom of the barn, he can see he is 15 feet from the barn. If his eye level is 5 feet from the ground, how tall is the barn?

Find x.



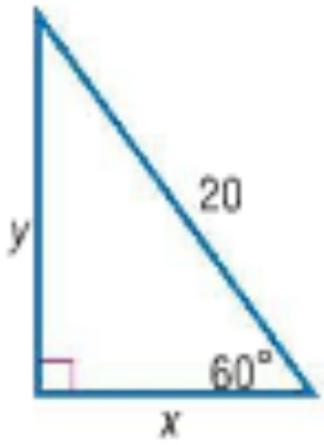
Determine whether each set of numbers can be the measures of the sides of a triangle. If so, classify the triangle as *acute*, *obtuse*, or *right*. Justify your answer.

18. 7, 24, 25

19. 13, 15, 16

20. 65, 72, 88

21. **SWIMMING** Alexi walks 27 meters south and 38 meters east to get around a lake. Her sister swims directly across the lake. How many meters to the nearest tenth did Alexi's sister save by swimming?


20
y
60°
x

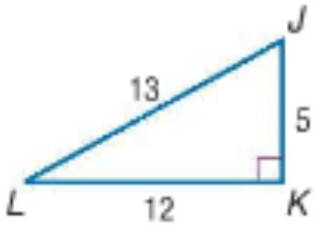
24. **CLIMBING** Jason is adding a climbing wall to his little brother's swing-set. If he starts building 5 feet out from the existing structure, and wants it to have a 60° angle, how long should the wall be?

8.5

SohCahToa

Example 4

Express each ratio as a fraction and as a decimal to the nearest hundredth.

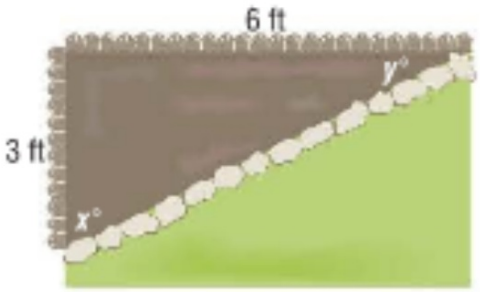


a. sin L

b. cos L

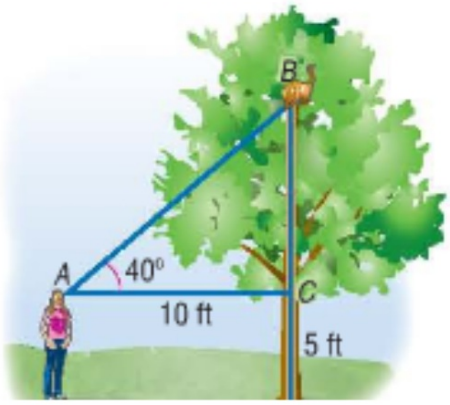
c. tan L

33. **GARDENING** Sofia wants to put a flower bed in the corner of her yard by laying a stone border that starts 3 feet from the corner of one fence and ends 6 feet from the corner of the other fence. Find the angles, x and y, the fence make with the border.



Example 5

Sarah's cat climbed up a tree. If she sights her cat at an angle of elevation of 40°, and her eyes are 5 feet off the ground, how high up from the ground is her cat?

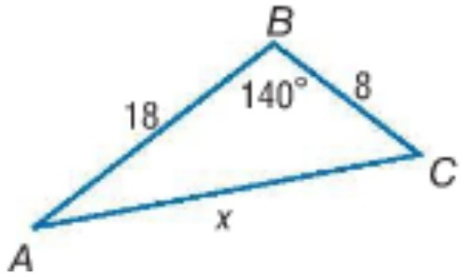
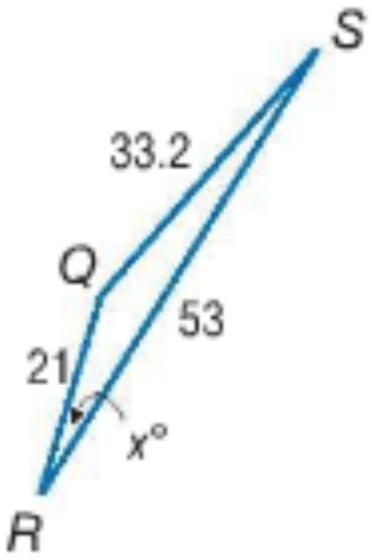


35. **TOPIC** There is a cell phone tower in the field across from Jen's house. If Jen walks 50 feet from the tower, and finds the angle of elevation from her position to the top of the tower to be 60°, how tall is the tower?

8.6

Example 6

Find x. Round to the nearest tenth.



37.