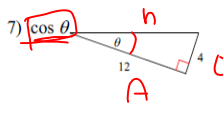


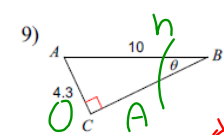
Lesson 64 Objective: SWBAT sketch angles and determine coterminal angles.

Kickoff

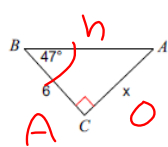
Complete questions 7, 9, 15, 17 on your homework sheet!

7)  $C = \frac{A}{h}$
 $\cos \theta = \frac{12}{h}$
 $\cos \theta = \frac{12}{4\sqrt{10}} = \frac{3\sqrt{10}}{\sqrt{10} \cdot \sqrt{10}}$
 $a^2 + b^2 = c^2$
 $12^2 + 4^2 = h^2$
 $\sqrt{160} = \sqrt{h^2}$
 $\sqrt{16} \sqrt{10} = h$
 $4\sqrt{10} = h$

Answers:
 (2) .1763
 (4) .3256
 (6) $\frac{4}{3}$
 (8) $\frac{8\sqrt{3}}{13}$

9)  $S = \frac{O}{h}$
 $\sin \theta = \frac{4.3}{10}$
 $\theta = \sin^{-1}\left(\frac{4.3}{10}\right) = 25.5^\circ$


Answers:
 (10) 45.5°
 (12) 62.9°

15)  $\tan 47^\circ = \frac{x}{6}$

Answers:
 (14) 12.9
 (16) 3.7

Work:
 $x = 6 \tan(47)$
 $x = 6.4$

17) Find sin A if $b = 6\sqrt{5}$, $c = 18$

 $\sin A = \frac{O}{h} = \frac{12}{18} = \frac{2}{3}$

Answers:
 (18) $\frac{3}{4}$
 (20) $\frac{9\sqrt{3}}{52}$
 (22) $\frac{4}{5}$
 (24) $\frac{21}{23}$

Work:
 $a^2 + b^2 = c^2$
 $(6\sqrt{5})^2 + b^2 = 18^2$
 $180 + b^2 = 324$
 $-180 \quad -180$
 $b^2 = 144$
 $b = 12$

Work:
 $a^2 + (2\sqrt{2})^2 = 23^2$
 $a^2 + 8 = 529$
 $a^2 = 521$
 $a = 21$

Angles in Standard Position

Angles and the Coordinate Plane

Angles that lie exactly on the x and y axis are called Quadrant angles.
They are 0, 90, 180, 270, 360
*infinite # of these

An angle is in **Standard Position** if its vertex is located at the origin and one ray is on the positive x-axis. The ray on the x-axis is called the **initial side** and the other ray is called the **terminal side**.

Positive angles - counterclockwise
Negative angles - clockwise

Examples: Sketch the angle in standard position and determine the quadrant it lies in.

Coterminal Angles

Angles are said to be **coterminal angles** if their angles in standard position have the same terminal side.

- Coterminal angles can be found by $+360$ or -360 .

Examples:

*infinite # of coterminal #'s

Find a positive coterminal angle of each angle.

a) $845^\circ + 360 = 1205$ $845 - 360 = 485$
 $845 - 360 = 485$ 1205

b) 735°
 $1095, 375$

c) $-557^\circ + 360 + 360 = 1683$

Find a negative coterminal angle of each angle.

a) 60°
 -300

b) 125°
 -235

c) -660°
 -300