Review for Current Unit Days 3-6

Kickoff-
1) Solve for tan A

$\tan A = \dfrac{40}{30}$

$\dfrac{4}{3}$

2) Find the missing side. Round to the nearest tenth.

$\sin 31 = \dfrac{16}{x}$

$\dfrac{16}{\sin 31} = \dfrac{x \sin 31}{\sin 31}$

$31.1 = x$

3) Find the missing side. Round to the nearest tenth.

$a^2 + b^2 = c^2$

$3.9^2 + x^2 = 11^2$

$15.21 + x^2 = 121$

$-15.21 \qquad -15.21$

$\sqrt{x^2} = \sqrt{105.79}$

$x = 10.3$

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Solving for an Angle

ALWAYS use SOH CAH TOA
Must hit the second button

angles round to the nearest degree.

1)

$\cos^{-1}(12/13)$

22.6

$23°$

2)

$\sin^{-1}(13/23)$

34.4

$34°$

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3)

4)

5)

6)

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7)

8)

9)

10)

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Applications

How to Approach Word Problems
1) Draw a triangle.
2) Label triangle using the problem.
3) Write x for what you are solving for.
(an angle is inside and a side is on the outside of the triangle!)
4) Solve the triangle!

11) A tree casts a shadow 21 m long. The angle of elevation of the sun is 55°. What is the height of the tree?

$\tan 55 = \dfrac{x}{21}$

$x = 21 \tan 55$

$x = 29.99$

30

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12) You are flying a kite and let out 30 ft of string but, it got caught in an 8 ft tree. What is the angle of elevation to the location of the kite?

$\sin^{-1}(8/30)$

$15.46 \rightarrow 15°$

13) An airplane climbs at an angle of 16° with the ground. Find the ground distance the plane travels as it moves 2500 m through the air.
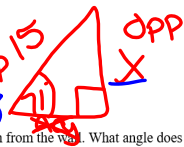
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14) A building 14.5 m tall casts a shadow of 11.4 m along the level ground. At what angle do the rays of the sun hit the ground?

$$\tan^{-1}\left(\frac{11.4}{14.5}\right)$$

$$38.17 \rightarrow \boxed{38}$$

15) A 15-foot ladder is placed on the side of a building. The ladder makes an angle of 71° with the ground. How high up the wall the ladder will reach?

$$\sin 71 = \frac{x}{15}$$

$$x = 15\sin 71 = 14.18$$

$\boxed{14.2}$ hyp 15   opp x

16) A 5.2 m ladder leans against a wall. The bottom of the ladder is 1.9 m from the wall. What angle does the ladder make with the ground?
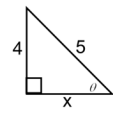
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17) Henry is flying a kite. The kite string makes an angle of 43° with the ground. If Henry is standing 100 feet from a point on the ground directly below the kite, find the length of the kite string

18) Use the triangle to the right to answer both parts.

A) Find the value of x.

B) Find the value of angle θ. Round your answer to the nearest degree.

4   5 θ x

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