

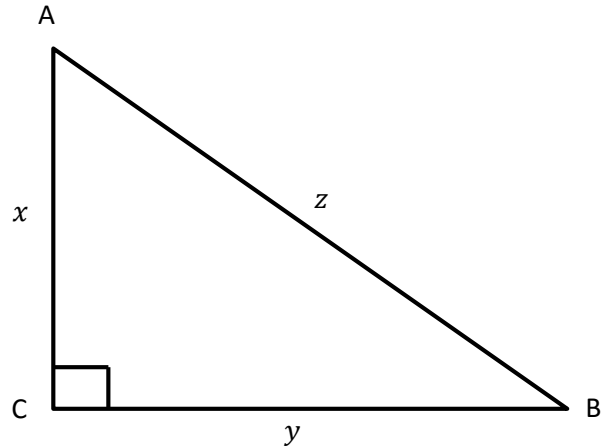
Unit 6: Triangle Geometry Day 4

Math 9 Principles

6-4 I can evaluate the sine, cosine, and tangent ratio in right angled triangle and use this to find missing sides and angles. (Remember to identify the opposite, adjacent, and hypotenuse)

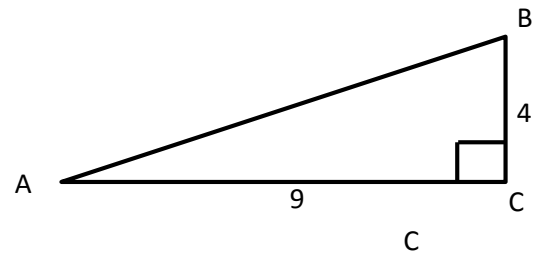
Complete the following using the letters provided.

- 1) The side opposite angle A is: _____
- 2) The side opposite angle B is: _____
- 3) The side adjacent angle A is: _____
- 4) The side adjacent angle B is: _____
- 5) $\tan A =$ _____
- 6) $\tan B =$ _____

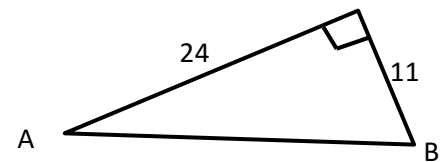


Show the Tangent ratio for each, then find angle A.

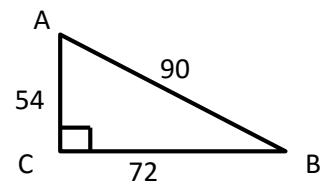
7) $\tan A =$ _____ Angle A = _____



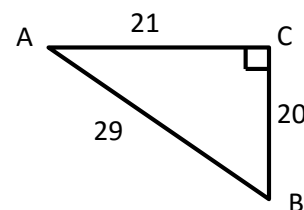
8) $\tan A =$ _____ Angle A = _____



9) $\tan A =$ _____ Angle A = _____



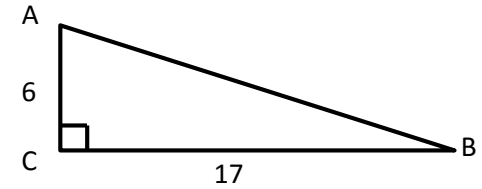
10) $\tan A =$ _____ Angle A = _____



Show the Tangent ratio of each angle and find its measure in degrees.

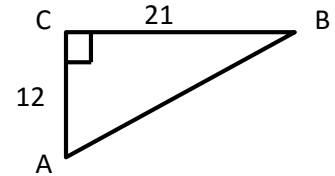
11) $\tan A =$ _____ Angle A = _____

$\tan B =$ _____ Angle B = _____



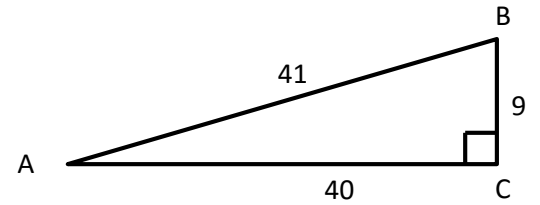
12) $\tan A =$ _____ Angle A = _____

$\tan B =$ _____ Angle B = _____



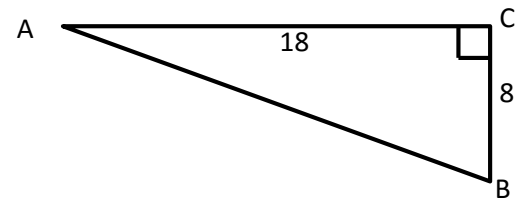
13) $\tan A =$ _____ Angle A = _____

$\tan B =$ _____ Angle B = _____



14) $\tan A =$ _____ Angle A = _____

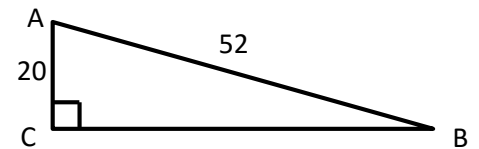
$\tan B =$ _____ Angle B = _____



15) $\tan A =$ _____ Angle A = _____

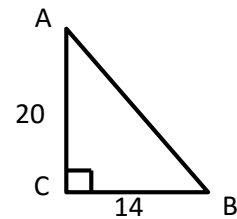
$\tan B =$ _____ Angle B = _____

(Find side BC first)



16) $\tan A =$ _____ Angle A = _____

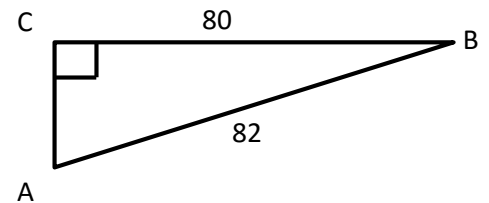
$\tan B =$ _____ Angle B = _____



17) $\tan A =$ _____ Angle A = _____

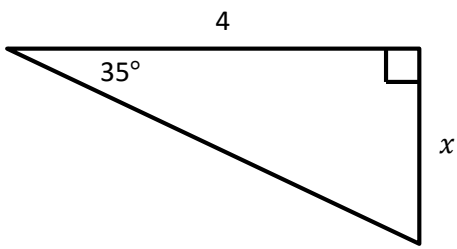
$\tan B =$ _____ Angle B = _____

(Find side AC first)

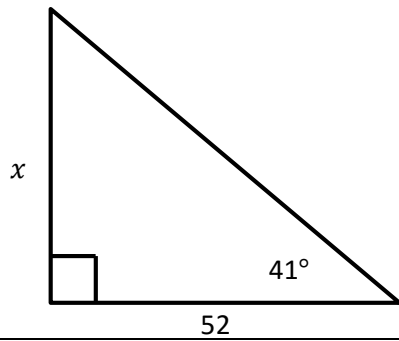


Use the Tangent ratio to calculate each indicated side length.

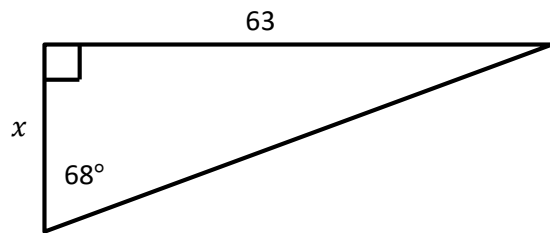
18)



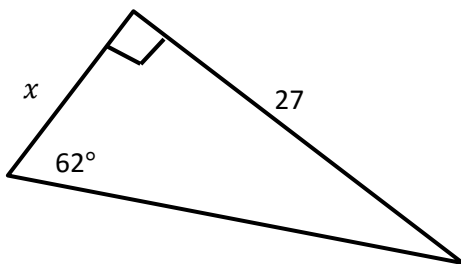
19)



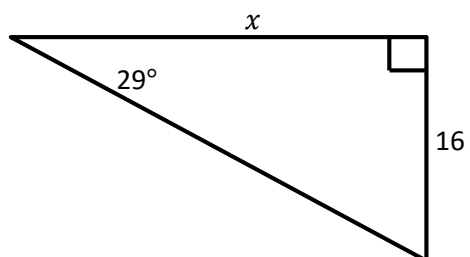
20)



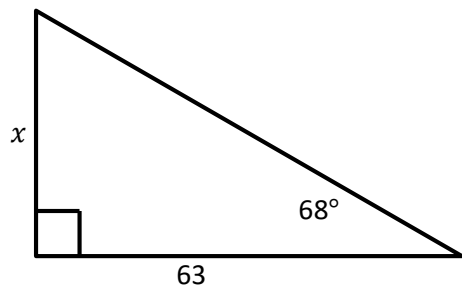
21)



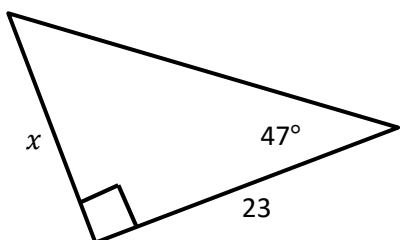
22)



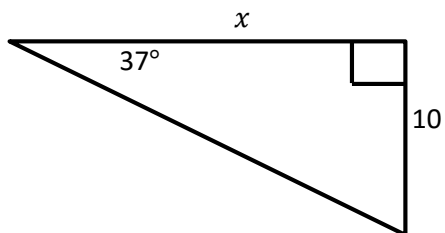
23)



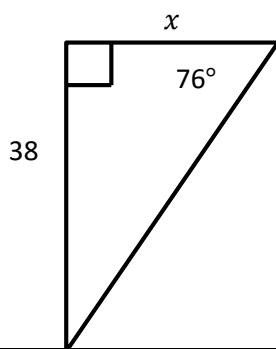
24)



25)



26)



Sketch a diagram and solve using the tangent ratio or arctangent as appropriate. (Remember to use arctangent when solving for an angle).

27) A ramp rises to a doorway 4 ft. off the ground. The bottom of the ramp is 18 ft. from the base of the building. Find the angle of elevation (bottom corner) of the ramp.

28) The top of a playground slide is 3.2 m high. The bottom of the slide is 4 m from the base of the ladder. Find the angle of elevation (bottom corner) of the slide.

29) A supporting wire, fastened 40 m from the base of a communications tower, makes an angle of 60° with the ground. How high up the tower does the wire reach?

30) A communications tower, on the sea coast, is 450 m high. From a ship at sea, the "angle of elevation" is 4° . How far is the ship offshore?

31) A telephone pole is supported by a steel cable connected to the pole 9 metres up. The cable is fixed into the ground, 5 metres from the base of the pole. Find the angle of elevation of the cable.