

Name: _____

Date: _____

Learning Goal 2.1

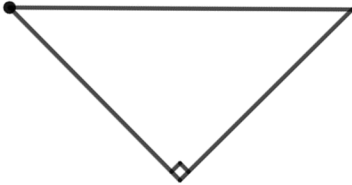
Apply the trigonometric ratios to calculate unknown lengths and angles in a right triangle.

Recap In the following triangle label the Hypotenuse, Opposite and Adjacent sides, from the point of view of angle C.

$\sin \theta =$

$\cos \theta =$

$\tan \theta =$



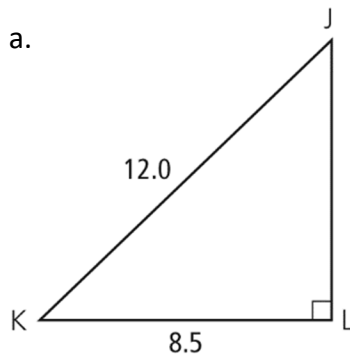
Standard for rounding, unless otherwise stated:

Lengths

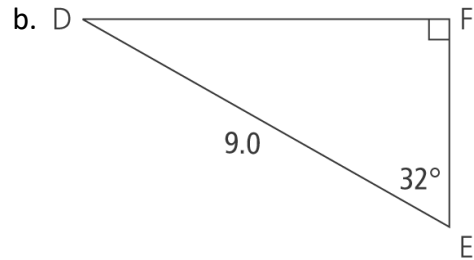
Angles

Example Solve each triangle. Express your answer to one decimal place.

a.



b.



Example A peregrine falcon has built a nest on a ledge of a building in Calgary, AB. The ledge is 34 m from the ground. Alain wants to take a photograph of the bird with his telephoto lens. He has set his camera up, waiting for the bird to return to the nest. His camera, sitting on a tripod, is 2 m from the ground. The angle of depression from the nest to Alain's camera is 28°

- Sketch a diagram reflecting the information given above.
- How far is the tripod and camera from the building, to the nearest tenth of a metre?
- At what angle does Alain have to set the tripod to take a picture of the nest?
- If Alain's lens can focus on objects up to 75 m away, can he focus on the falcon's nest? Justify your answer.

Example An auger is used to move grain from a combine to a truck that will transport the grain to a bin for storage. The angle of elevation of the auger is 25° and the spout makes a right angle with the falling grain. If the top of the spout of the auger is 78 in. above the truck box, what is the length of the auger, to the nearest inch?

