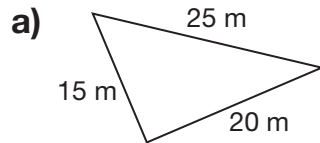


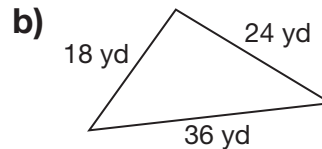
Chapter Review

1. Determine if each triangle below is a right triangle or not.



$$15^2 + 20^2 = 625$$

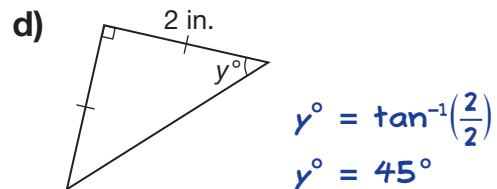
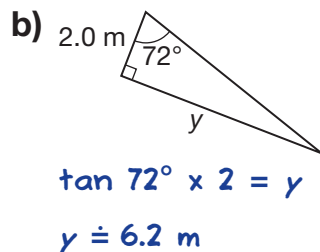
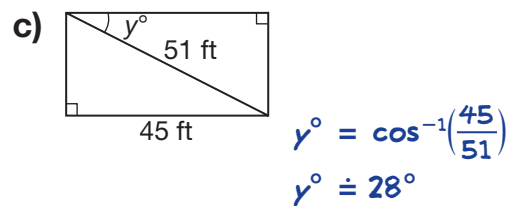
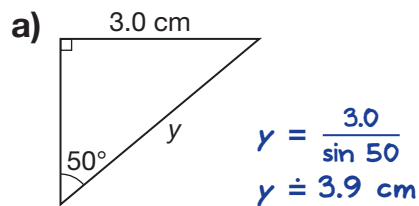
$$25^2 = 625 \quad \text{yes}$$



$$18^2 + 24^2 = 900$$

$$36^2 = 1296 \quad \text{no}$$

2. Calculate the value of y in each right triangle.



3. Yannick is creating rectangular doors for his kitchen cabinets. Each door is 20 in. by 36 in. What is the measure of the diagonals?

$$c = \sqrt{(20^2 + 36^2)}, \text{ which is } 41.182\dots$$

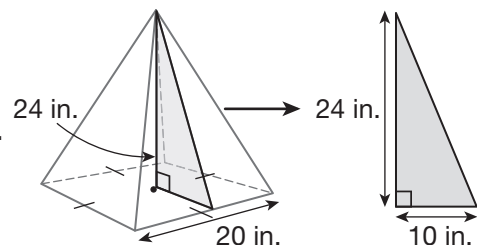
The diagonals each measure about 41.2 in.

4. Dorothy needs to know the slant height before she can calculate the area of a pyramid. Calculate the slant height.

$$10^2 + 24^2 = 676$$

$$c = \sqrt{676}$$

The slant height is 26 in.



5. Arthur, a golfer, hit his golf ball 230 yd from the tee.
- a) How far is the hole from the tee, to the nearest yard?

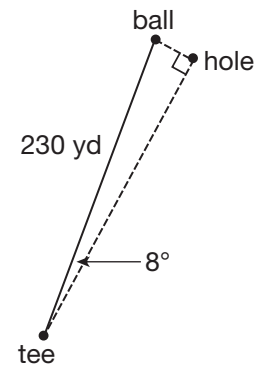
$$230 \times \cos 8^\circ = 227.7616\dots$$

The hole is about 228 yd from the tee.

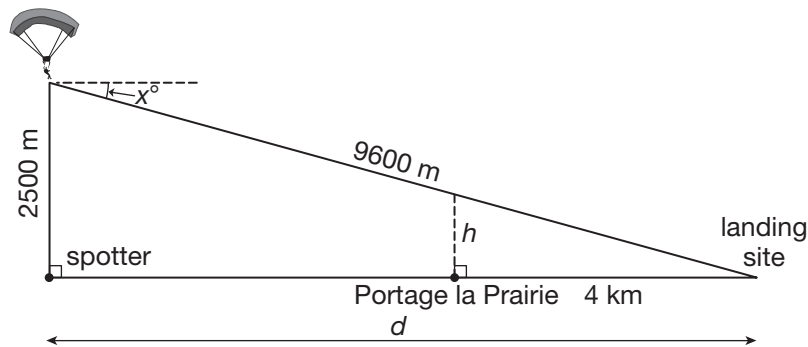
- b) How many yards is the ball from the hole?

$$\text{e.g., } 230 \times \sin 8^\circ = 32.0098\dots$$

The ball is about 32 yd from the hole.



6. Lucie is a parachute jumper. She jumped from the plane when she was directly over her spotter on the ground.



- a) Calculate the distance, d , that her spotter must travel to the place Lucie will land. (Round to the nearest 10 m.)

$$d = \sqrt{(9600^2 - 2500^2)}$$

$$d = 9268.764\dots \quad \text{The distance is about 9270 m.}$$

- b) What is the angle of depression to her landing site, when she jumps from the plane? (Round to the nearest degree.)

$$x^\circ = \sin^{-1}\left(\frac{2500}{9600}\right)$$

$$x^\circ = 15.0947\dots \quad \text{The angle of depression is about } 15^\circ.$$

- c) During this jump, she passes over the town of Portage la Prairie, Manitoba. What is her altitude, h , when she passes over the town?

$$h = 4000 \times \tan 15^\circ$$

$$h = 1071.797\dots \quad \text{Lucie's altitude is about 1072 m.}$$

7. A building code states that for stairs, the steepest angle is 72 cm of rise for each 100 cm of run. What is the steepest angle for building stairs, to the nearest degree?

$$\tan x^\circ = \frac{72}{100}, \text{ so } x^\circ = \tan^{-1}\left(\frac{72}{100}\right)$$

$$x^\circ = 35.7538\dots \quad \text{The steepest angle is about } 36^\circ.$$

