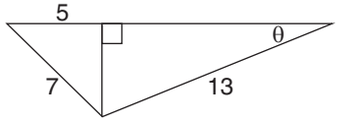
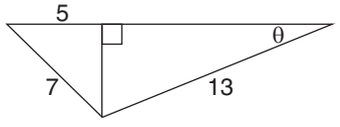
Check Up

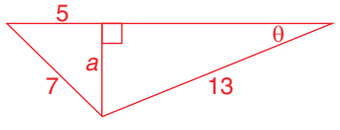
1. Determine the value of θ, to the nearest degree, in the diagram.



Compare your answers.

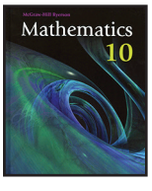
1. Determine the value of θ, to the nearest degree, in the diagram.





$$a^2 + b^2 = c^2$$
$$a^2 + 5^2 = 7^2$$
$$a^2 + 25 = 49$$
$$a^2 + \cancel{25} - \cancel{25} = 49 - 25$$
$$a^2 = 24$$
$$\sqrt{a^2} = \sqrt{24}$$
$$a = 4.898...$$

$$\sin\theta = \frac{\text{length opposite } \theta}{\text{hypotenuse}}$$
$$\sin\theta = \frac{4.898...}{13}$$
$$\theta = \sin^{-1}\left(\frac{4.898...}{13}\right)$$
$$\theta \doteq 22°$$



For further information about solving problems using right triangles, see pp. 125 – 131 of *Mathematics 10*.

Multimedia

Additional video examples for solving problems using right triangles have been provided.

By combining the strategies you used with simpler one-step problems, it is possible to solve more complex problems involving more than one right triangle. The three primary trigonometric ratios, the Pythagorean theorem, and the triangle angle sum are some of the most important tools available for working with right triangles.