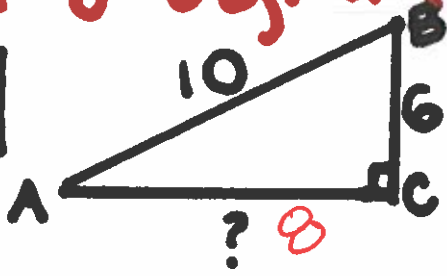


Unit 8 Obj. #1

1-4



$$6^2 + b^2 = 10^2$$

$$36 + b^2 = 100$$

$$b^2 = 64 \quad b = \sqrt{64} \quad b = 8$$

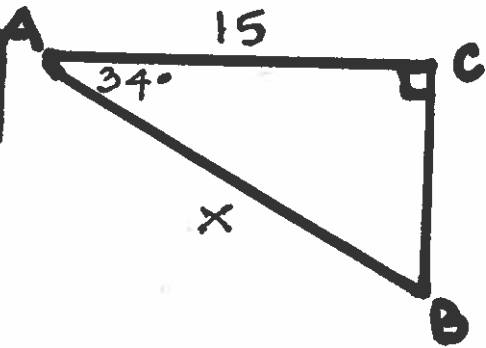
Review Right Triangles

$$\sin B \frac{\text{opp}}{\text{hyp}} = \frac{8}{10} = \frac{4}{5}$$

$$\cos B \frac{\text{adj}}{\text{hyp}} = \frac{6}{10} = \frac{3}{5}$$

$$\tan B \frac{\text{opp}}{\text{adj}} = \frac{8}{6} = \frac{4}{3}$$

5-12



reference angle = 34°

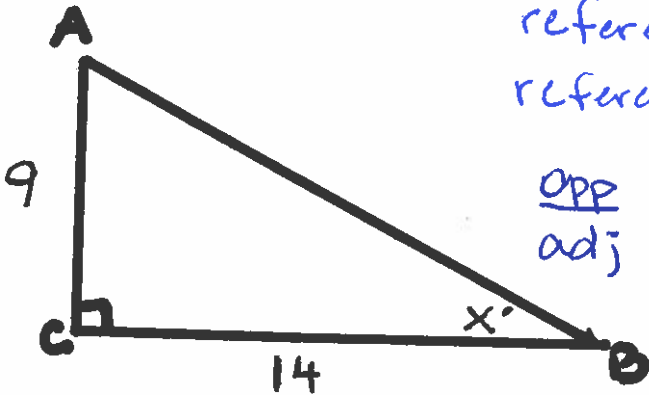
$$\frac{\text{adj}}{\text{hyp}}$$

$$\cos 34^\circ = \frac{15}{x}$$

$$x \cos 34^\circ = 15$$

$$x = \frac{15}{\cos 34^\circ}$$

$$x \approx 18.093$$



reference angle is unknown
reference angle = x

$$\frac{\text{opp}}{\text{adj}}$$

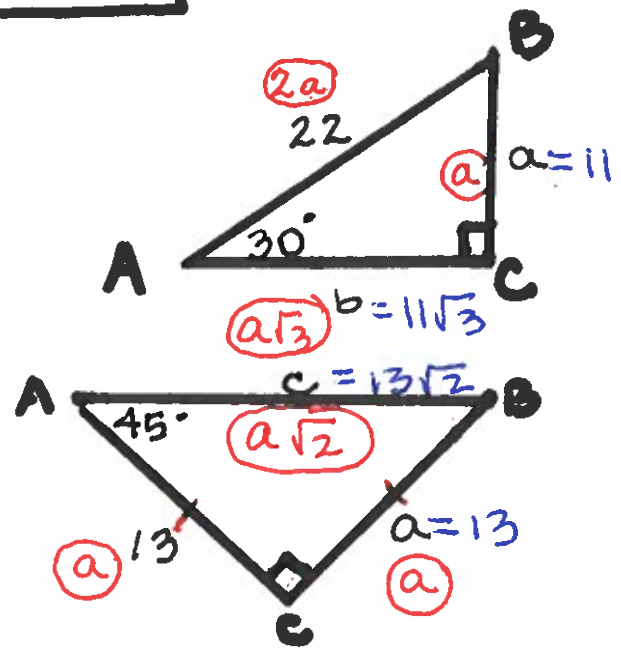
$$\tan x^\circ = \frac{9}{14}$$

$$x = \tan^{-1}\left(\frac{9}{14}\right)$$

$$x = \arctan\left(\frac{9}{14}\right)$$

$$x \approx 32.735^\circ$$

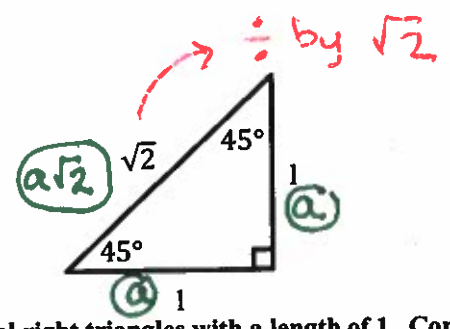
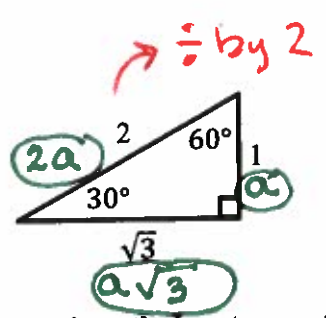
13-14



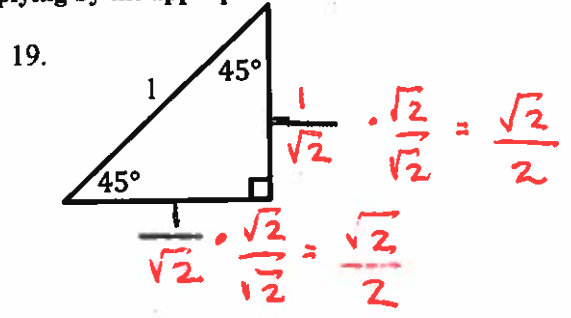
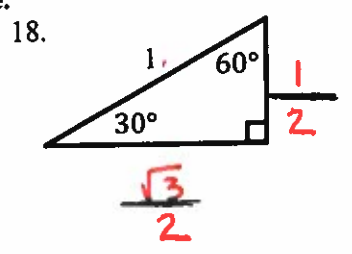
$\angle B = 60^\circ$
 $a = \frac{22}{2} = 11$
 $b = 11\sqrt{3}$

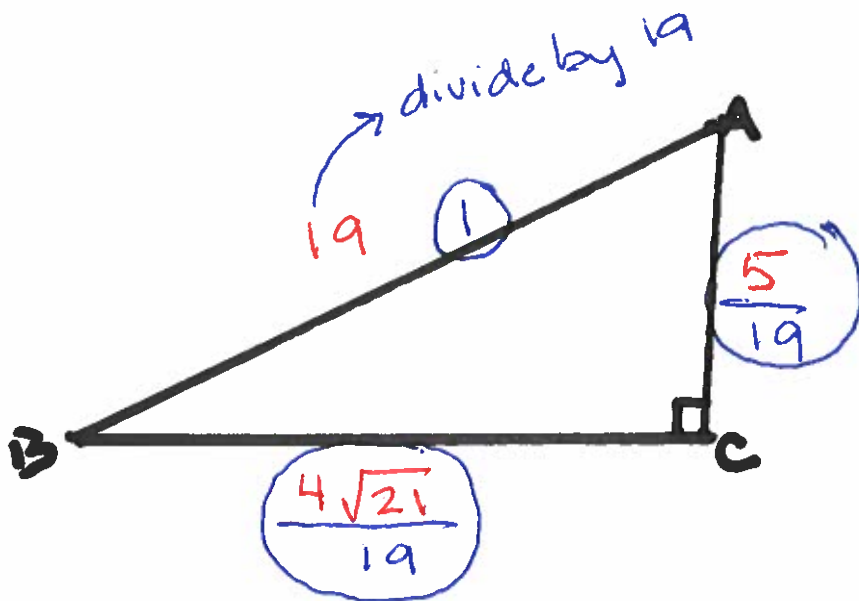
$\angle B = 45^\circ$
 $a = 13$
 $c = 13\sqrt{2}$

18-19



[18-19]: It is also advantageous to have the hypotenuse of these special right triangles with a length of 1. Convert each of the special right triangles so that its hypotenuse has length 1 by multiplying by the appropriate scale factor. Label the length for each side of the triangle.





$$5^2 + (4\sqrt{21})^2 = c^2$$

$$25 + 336 = c^2$$

$$361 = c^2$$

$$c = \sqrt{361} \quad c = 19$$