

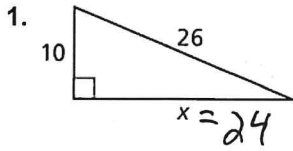
Ch. 9 Skills Review

KEY

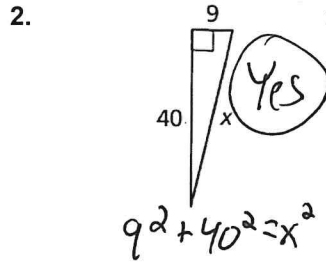
Date _____

Find the value of x . Then tell whether the side lengths form a Pythagorean triple.

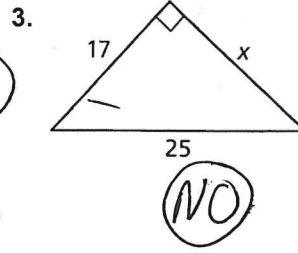
5 12 13



$x = 24$
Yes



$9^2 + 40^2 = x^2$
 $x = 41$
Yes

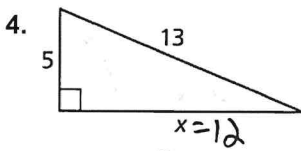


NO

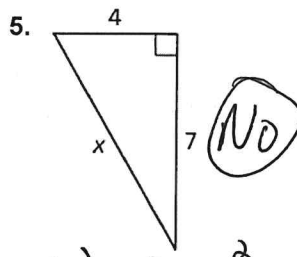
$$17^2 + x^2 = 25^2$$

$$x^2 = 25^2 - 17^2$$

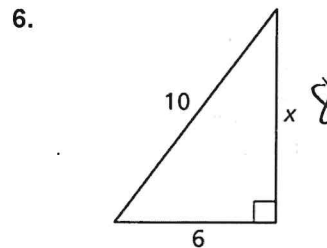
$$x = 18.33$$



$x = 12$
Yes

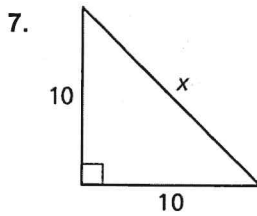


$4^2 + 7^2 = x^2$
 $x = 8.06$
NO



3, 4, 5
Yes

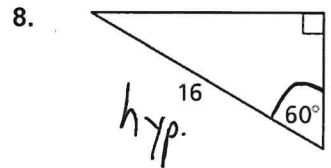
Find the value of x . Write your answer in simplest form.



$$10^2 + 10^2 = x^2$$

$$\sqrt{200} = \sqrt{x^2}$$

$$x = \sqrt{200} \approx 14.1$$



$$\cos(\theta) = \frac{\text{adj.}}{\text{hyp.}}$$

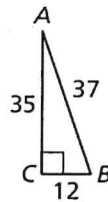
$$16 \cdot \cos 60^\circ = \frac{x}{16} \cdot 16$$

$$x = 16 \cos 60^\circ = 8$$

Use the figure. Write your answer as a fraction and as a decimal rounded to the nearest hundredth.

9. $\sin A$
 $= \frac{12}{37} = 0.32$

10. $\cos A$
 $= \frac{35}{37} = .95$



11. $\sin B$
 $= \frac{35}{37} = .95$

12. $\cos B$
 $= \frac{12}{37} = 0.32$

Use the triangle for #13-16.

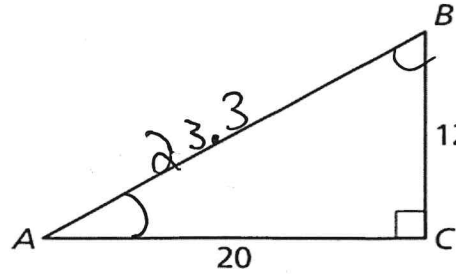
Find $\tan A$ and $\tan B$. Write each answer as a fraction and as a decimal rounded to the nearest tenth.

13. $\tan A$

14. $\tan B$

$$= \frac{12}{20} = 0.6$$

$$= \frac{20}{12} = 1.6\bar{6}$$



Find the measure of each angle to the nearest degree.

15. $m\angle A$

16. $m\angle B$

$$\tan A = \frac{12}{20}$$

$$\tan B = \frac{20}{12}$$

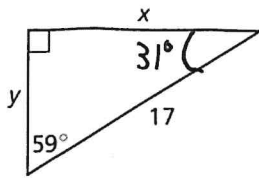
$$A = \tan^{-1}\left(\frac{12}{20}\right) = 30.97^\circ \quad (31^\circ)$$

$$B = \tan^{-1}\left(\frac{20}{12}\right) = 59.04^\circ \quad (59^\circ)$$

Solve the Triangle. Find the values of the missing angles and of x and y .

Round your answer to the nearest tenth.

17.



$$90 - 59 = 31^\circ$$

$$17 \cdot \cos 59^\circ = \frac{y}{17} \cdot 17$$

$$17 \cdot \sin 59^\circ = \frac{x}{17} \cdot 17$$

$$17 \cos 59 = y$$

$$17 \sin 59 = x$$

$$y = 8.76^a$$

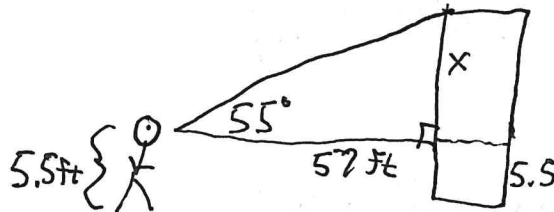
$$x = 14.6^m$$

18. You look up at a 55° angle to see the top of a building. The vertical distance from the ground to your eye is 5.5 feet and the distance from you to the building is 57 feet. Estimate the height of the building.

$$\tan 55^\circ = \frac{x}{57}$$

$$x = 57 \tan 55^\circ = 81.4 \text{ ft.}$$

$$81.4 + 5.5 \text{ ft} = 86.9 \text{ ft.}$$



19. A bird sits on top of a lamppost. The angle made by the lamppost and a line from the feet of the bird to the feet of an observer standing away from the lamppost is 55° . The distance from the lamppost to the observer is 25 feet. Estimate the height of the lamppost?

$$25 \cdot \tan 55^\circ = \frac{x}{25} \cdot 25$$

$$25 \tan 55^\circ = x$$

$$x = 35.7^\circ$$

