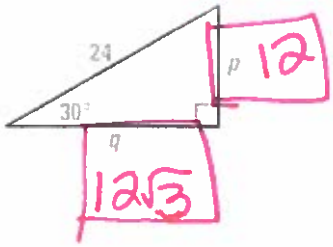
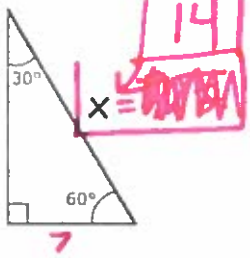
Name Key

1. Blue q=?

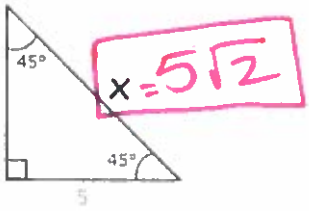


30-60-90
x x√3 2x
12 12√3 24

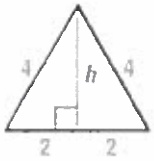
2. Red x=?



3. Orange x=?

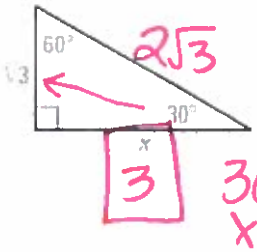


4. Orange h=?



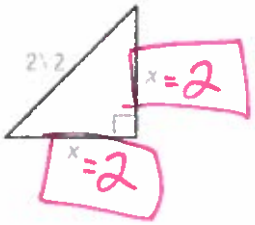
$2^2 + h^2 = 4^2$
$4 + h^2 = 16$
$h^2 = 12$
$h = 2\sqrt{3}$

5. yellow x=?

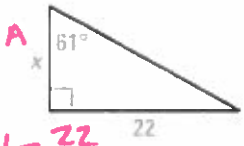


30-60-90
x x√3 2x
√3 3 2√3

6. Brown x=?



7. Green x=?



$\tan 61 = \frac{22}{x}$
$x \tan 61 = 22$
$x \approx 12.19$

8. Orange x=?

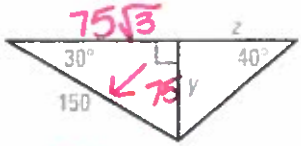
$\frac{\tan 56}{1} = \frac{x}{13}$
$13 \tan 56 = x$
$19.27 \approx x$

9. Green Tan B = ?

FINDING TANGENT RATIOS **Find tan *A* and tan *B*. Write each answer as a fraction and as a decimal rounded to four places.**

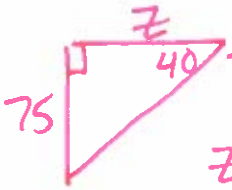
$\tan B = \frac{7}{24}$

10. Yellow z = ?



30-60-90
x x√3 2x
75 75√3 150

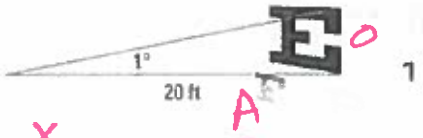
$y = 75$



$\tan 40 = \frac{75}{z}$
$z = \frac{75}{\tan 40}$
$z = 89.38$

11. Brown

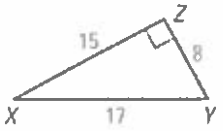
EYE CHART You are looking at an eye chart that is 20 feet away. Your eyes are level with the bottom of the "E" on the chart. To see the top of the "E," you look up 1°. How tall is the "E"?



$\tan 1 = \frac{x}{20}$ .35 ft

12. Purple Sin x = ?

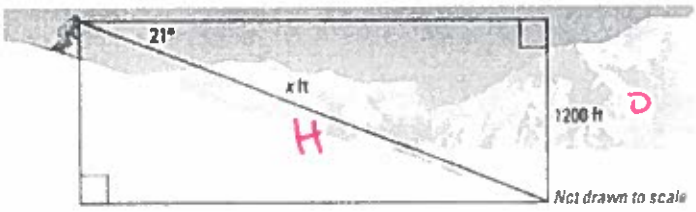
Find sin *X* and sin *Y*. Write each answer as a fraction and as a decimal. Round to four decimal places, if necessary.



$\sin X = \frac{8}{17}$

13. Orange

SKIING You are skiing on a mountain with an altitude of 1200 meters. The angle of depression is 21°. About how far do you ski down the mountain?



$\sin 21 = \frac{1200}{x}$

$x = \frac{1200}{\sin 21}$

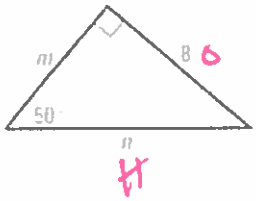
3348.51 ft

14. Black (Base Length y = ?)

SKATEBOARD RAMP You want to build a skateboard ramp with a length of 14 feet and an angle of elevation of 26°. You need to find the height and length of the base of the ramp.

$\cos 26 = \frac{y}{14}$ 12.58 ft

15. Green n = ?

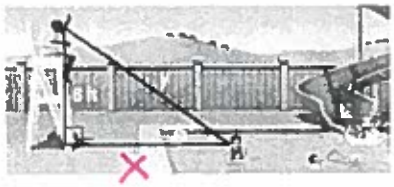


$\sin 50 = \frac{8}{n}$

$n = \frac{8}{\sin 50}$ 10.44

16. Yellow x = ?

SWIMMER The angle of elevation from the swimmer to the lifeguard is 35°. Find the distance *x* from the swimmer to the base of the lifeguard chair. Find the distance *y* from the swimmer to the lifeguard.



$\tan 35 = \frac{6}{x}$

$x = \frac{6}{\tan 35}$

x = 8.57 ft