

Trigonometric Puzzle

Shade all the regions which display *correct* trigonometric ratios to find the hidden animal.

The puzzle consists of the following triangles and ratios:

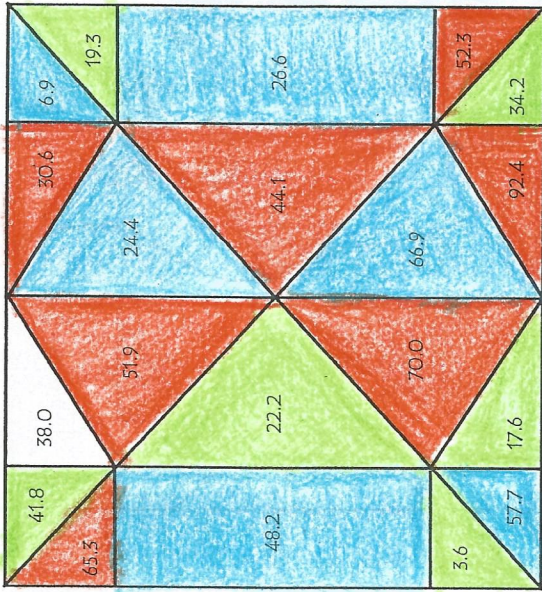
- Triangle 1:** Right-angled triangle with sides 3, 4, 5. Angle i at the bottom-left. Ratio: $\sin i = \frac{4}{5}$.
- Triangle 2:** Right-angled triangle with sides a, b, c . Angle m at the bottom-left. Ratio: $\tan m = \frac{b}{a}$.
- Triangle 3:** Right-angled triangle with sides x, z, y . Angle c at the bottom-right. Ratio: $\sin c = \frac{z}{x}$.
- Triangle 4:** Right-angled triangle with sides g, a, f . Angle a at the bottom-left. Ratio: $\cos a = \frac{f}{g}$.
- Triangle 5:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\tan h = \frac{13}{12}$.
- Triangle 6:** Right-angled triangle with sides m, n, l . Angle f at the bottom-right. Ratio: $\cos f = \frac{l}{n}$.
- Triangle 7:** Right-angled triangle with sides a, b, c . Angle y at the bottom-right. Ratio: $\tan y = \frac{b}{a}$.
- Triangle 8:** Right-angled triangle with sides 6, 8, 10. Angle e at the bottom-right. Ratio: $\sin e = 0.6$.
- Triangle 9:** Right-angled triangle with sides d, g, f . Angle k at the bottom-right. Ratio: $\cos k = \frac{a}{c}$.
- Triangle 10:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\sin g = \frac{c}{f}$.
- Triangle 11:** Right-angled triangle with sides z, x, y . Angle l at the bottom-left. Ratio: $\sin l = xy$.
- Triangle 12:** Right-angled triangle with sides a, b, c . Angle n at the bottom-right. Ratio: $\tan n = \frac{b}{c}$.
- Triangle 13:** Right-angled triangle with sides a, x, c . Angle x at the bottom-left. Ratio: $\cos x = \frac{b}{c}$.
- Triangle 14:** Right-angled triangle with sides 3, 4, 5. Angle a at the bottom-left. Ratio: $\sin a = 0.6$.
- Triangle 15:** Right-angled triangle with sides d, g, f . Angle g at the bottom-right. Ratio: $\tan y = \frac{b}{a}$.
- Triangle 16:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\sin d = \frac{5}{13}$.
- Triangle 17:** Right-angled triangle with sides a, b, c . Angle a at the bottom-left. Ratio: $\tan a = \frac{4}{3}$.
- Triangle 18:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\cos a = \frac{5}{13}$.
- Triangle 19:** Right-angled triangle with sides a, b, c . Angle a at the bottom-left. Ratio: $\sin p = \frac{a}{c}$.
- Triangle 20:** Right-angled triangle with sides 8, 10, 6. Angle q at the bottom-right. Ratio: $\cos q = 0.8$.
- Triangle 21:** Right-angled triangle with sides a, b, c . Angle r at the bottom-right. Ratio: $\tan r = \frac{a}{b}$.
- Triangle 22:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\sin d = \frac{12}{13}$.
- Triangle 23:** Right-angled triangle with sides a, b, c . Angle r at the bottom-right. Ratio: $\cos f = 0.8$.
- Triangle 24:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\tan a = \frac{12}{5}$.
- Triangle 25:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\sin x = \frac{1}{1.4}$.
- Triangle 26:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\cos j = \frac{8}{c}$.
- Triangle 27:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\tan b = \frac{w}{v}$.
- Triangle 28:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\sin i = 4$.
- Triangle 29:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\cos n = \frac{c}{8}$.
- Triangle 30:** Right-angled triangle with sides $h, 12, 13$. Angle h at the bottom-left. Ratio: $\tan b = \frac{w}{v}$.

Trig Ratio Scavenger Hunt

Name _____

KEY

Directions: Find the value of x in the following problems. Then, find the answer in the puzzle above and color that piece according to your color chart. The answers will only be used once and not all answers will be used.



Color 2

7 $\tan 18^\circ = \frac{x}{75}$
 $x = 24.4$

8
 $\cos x = \frac{8}{12}$
 $x = 48.2^\circ$

10
 $\sin 35^\circ = \frac{x}{12}$
 $x = 6.9$

9
 $\tan x = \frac{11}{x}$
 $x = 26.6^\circ$

13
 $\tan 60^\circ = \frac{100}{x}$
 $x = \frac{100}{\tan 60^\circ}$
 $x = 57.7$

12
 $\sin 72^\circ = \frac{x}{4}$
 $x = 3.8$

*not used

11
 $\sin x = \frac{23}{25}$
 $x = 66.9^\circ$

Color 3 $\cos 5^\circ = \frac{92}{y}$
 $y = 92.4$

Color 1

1 $\sin 27^\circ = \frac{x}{8}$
 $x = 3.6$

2
 $\tan 22^\circ = \frac{x}{55}$
 $x = 22.2$

3
 $\tan 65^\circ = \frac{x}{9}$
 $x = 19.3$

4 $\cos 54^\circ = \frac{x}{30}$
 $x = 17.6$

5
 $\cos 54^\circ = \frac{x}{30}$
 $x = 17.6$

6
 $\sin x = \frac{16}{9}$
 $x = 34.2^\circ$

7
 $\cos x = \frac{3.8}{5.1}$
 $x = 41.9^\circ$

Color 3

10
 $\cos x = \frac{90}{263}$
 $x = 70.0^\circ$

11
 $\cos 51^\circ = \frac{x}{70}$
 $x = 44.1$

12
 $\sin 50^\circ = \frac{50}{x}$
 $x = 65.3$

13
 $\cos x = \frac{61.2}{100}$
 $x = 52.3^\circ$

14
 $\tan x = \frac{60}{47}$
 $x = 51.9^\circ$

15
 $\sin 36^\circ = \frac{18}{x}$
 $x = 30.6$

16
 $\sin 36^\circ = \frac{18}{x}$
 $x = 30.6$