

Worksheet 2

Trigonometric ratios

1. Complete each ratio.

1.1 $\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$

1.2 $\sin \theta = \frac{\square}{\square}$

1.3 $\cos \theta = \frac{\square}{\square}$

1.4 $\sec \theta = \frac{\square}{\square}$

1.5 $\operatorname{cosec} \theta = \frac{\square}{\square}$

1.6 $\cot \theta = \frac{\square}{\square}$

2. Calculate each ratio, given the following angles. Correct to one decimal place where necessary. (You will need a calculator.)

2.1 $\tan 35^\circ$

2.2 $\sin 40^\circ$

2.3 $\cot 55^\circ$

2.4 $\sin 20^\circ$

2.5 $\operatorname{cosec} 25^\circ$

2.6 $\sec 45^\circ$

2.7 $\cos 10^\circ$

2.8 $\cot 80^\circ$

2.9 $\sin 230^\circ$

2.10 $\sin 90^\circ$

2.11 $\sin(25^\circ + 50^\circ)$

2.12 $\cos 340^\circ$

2.13 $\tan 70^\circ$

2.14 $\cos(90^\circ - 40^\circ)$

2.15 $\sin 5^\circ$

3. Calculate each angle size (correct to one decimal place) given the following ratios.

3.1 $\cos \theta = 0,7$

3.2 $\tan \theta = 1$

3.3 $\sin(\theta - 15^\circ) = \frac{1}{\sqrt{2}}$

3.4 $\tan \theta = 25$

3.5 $\cot \theta = 1$

3.6 $2 \sin \theta - 1 = 0$

3.7 $2 \sin \theta = 1$

3.8 $\operatorname{cosec} \theta = 2$

3.9 $\sqrt{3} \tan \theta - 1 = 0$

3.10 $\cos \theta = 0$

3.11 $\sec \theta = \frac{2}{\sqrt{3}}$

3.12 $\sec^2 \theta = 4$

3.13 $2 \sin \theta = \sqrt{3}$

3.14 $\sin^3 \theta = \frac{1}{8}$

3.15 $2 \sin(\theta + 20^\circ) - 2 = 0$

Determining trigonometric ratios from triangles

1. Name each ratio with respect to θ .

1.1 $\frac{NL}{MN} = \sin \theta$

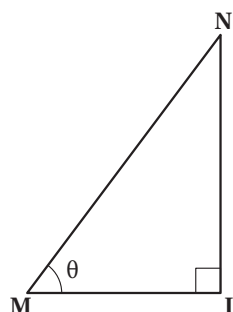
1.2 $\frac{MN}{NL} = \text{---}$

1.3 $\frac{NL}{ML} = \text{---}$

1.4 $\frac{ML}{NL} = \text{---}$

1.5 $\frac{ML}{MN} = \text{---}$

1.6 $\frac{MN}{ML} = \text{---}$



2. Refer to the diagram. Complete each formula to make the ratios valid.

2.1 $\sin \alpha = \frac{BC}{\square} = \frac{\square}{AE}$

2.2 $\cos \alpha = \frac{\square}{AC} = \frac{AD}{\square}$

2.3 $\tan \alpha = \frac{BC}{\square} = \frac{\square}{AD}$

2.4 $\sec \alpha = \frac{1}{\cos \alpha} = \frac{AC}{\square} = \frac{\square}{AD}$

2.5 $\operatorname{cosec} \alpha = \frac{1}{\sin \alpha} = \frac{\square}{BC} = \frac{AE}{\square}$

2.6 $\cot \alpha = \frac{1}{\tan \alpha} = \frac{\square}{BC} = \frac{AD}{\square}$

