

1.2 Calculators and Trig Functions

Notes

1 degree is equal to $1/360$ of a full rotation.

1 minute is equal to $1/60$ of a degree. So there are 60 minutes in 1 degree.

1 second is equal to $1/60$ of a minute. So there are 60 seconds in 1 minute.

$23^{\circ} 14'$ is read as 23 degrees and 14 minutes

Add or Subtract as indicated.

$$(23^{\circ}14') + (12^{\circ}42')$$

$$(68^{\circ}44') - (18^{\circ}32')$$

Convert each of the following to degrees and minutes. Round to the nearest minute.

$$34.5^{\circ}$$

$$54.45^{\circ}$$

$$12.8^{\circ}$$

Change each of the following to decimal degrees. If rounding is necessary, round to the nearest hundredth of a degree.

$$32^{\circ}19'$$

$$65^{\circ}27'$$

$$21^{\circ}40'$$

Use a calculator to find each of the following. Round all answers to four places past the decimal point.

$$\sin 43.1^{\circ}$$

$$\cos 28.7^{\circ}$$

$$\tan 63.1^{\circ}$$

$$\csc 23.4^{\circ}$$

$$\cot 86.2^{\circ}$$

$$\csc 13.6^{\circ}$$

Find θ if θ is between 0° and 90° . Round your answers to the nearest tenth of a degree.

$$\cos \theta = .8774$$

$$\tan \theta = .6345$$

$$\sec \theta = 1.234$$

$$\cot \theta = .7896$$

Use a calculator to find a value of θ between 0° and 90° that satisfies each statement below. Write your answer in degrees and minutes, rounded to the nearest minute.

$$\sin \theta = .3474$$

$$\cos \theta = .2375$$

$$\csc \theta = 1.4398$$

$$\cot \theta = .5846$$

Guided Practice

Use a calculator to find each of the following. Round all answers to four places past the decimal point.

$$1. \sin 25.4^\circ = \underline{\hspace{2cm}}$$

$$6. \csc 19.21^\circ = \underline{\hspace{2cm}}$$

$$2. \cos 16^\circ = \underline{\hspace{2cm}}$$

$$7. \cos 19^\circ 30' = \underline{\hspace{2cm}}$$

$$3. \tan 85.12^\circ = \underline{\hspace{2cm}}$$

$$8. \tan 38^\circ 15' = \underline{\hspace{2cm}}$$

$$4. \cot 54^\circ = \underline{\hspace{2cm}}$$

$$9. \sin 64^\circ 40' = \underline{\hspace{2cm}}$$

$$5. \sec 64.7^\circ = \underline{\hspace{2cm}}$$

$$10. \sec 42^\circ 54' = \underline{\hspace{2cm}}$$

Find θ if θ is between 0° and 90° . Round your answers to the nearest tenth of a degree.

$$11. \cos \theta = .9685 \quad \theta = \underline{\hspace{2cm}}$$

$$14. \cos \theta = .2723 \quad \theta = \underline{\hspace{2cm}}$$

$$12. \sin \theta = .8821 \quad \theta = \underline{\hspace{2cm}}$$

$$15. \sin \theta = .1993 \quad \theta = \underline{\hspace{2cm}}$$

$$13. \tan \theta = .2456 \quad \theta = \underline{\hspace{2cm}}$$

$$16. \tan \theta = .4663 \quad \theta = \underline{\hspace{2cm}}$$

Use a calculator to find a value of θ between 0° and 90° that satisfies each statement below. Write your answer in degrees and minutes, rounded to the nearest minute.

17. $\cos \theta = .9258$ $\theta =$ _____

18. $\sin \theta = .6481$ $\theta =$ _____

19. $\tan \theta = .8541$ $\theta =$ _____

Recall from Section 2.1:

If $\sin A = .8870$ and $\cos B = .8870$, then what do we know about A and B? Find the values for A and B to justify your conclusion.

Complete.

5. $\cos 22^\circ \approx$?

6. $\sin 79^\circ \approx$?

7. \cos ? ≈ 0.7771

Find the values of x and y to the nearest integer.

