1.1 Angles

Provide an appropriate response.
   1) Find the complement of an angle whose measure is 73°.

   2) Find the supplement of an angle whose measure is 37°.

Perform the calculation.
   3) 180° - 35°51′14″

   4) 90° - 35°16′46″

Convert the angle to decimal degrees and round to the nearest hundredth of a degree.
   5) 56°35′43″

Convert the angle to degrees, minutes, and seconds.
   6) 47.46°

Draw the given angle in standard position. Draw an arrow representing the correct amount of rotation. Find the measure of two other angles, one positive and one negative, coterminal with the given angle.
   7) 115°

   8) -85°

Solve the problem.
   9) A wheel is rotating 900 times per minute. Through how many degrees does a point on the edge of the wheel move in $\frac{1}{3}$ seconds?

1.2 Angle Relationships and Similar Triangles

Use the properties of angle measures to find the measure of each marked angle.
   10)

     \[
     \begin{align*}
     a &= (2x + 5)° \\
     b &= (4x - 33)°
     \end{align*}
     \]
Use the properties of angle measures to find the measure of each marked angle.

11)

\[
\begin{array}{c}
\text{a} = (x + 19)^\circ \\
\text{b} = (x + 81)^\circ \\
\end{array}
\]

12) Lines \( m \) and \( n \) are parallel.

\[
\begin{array}{c}
\text{a}
\end{array}
\]

\[
\begin{array}{c}
\text{b}
\end{array}
\]

\[
\begin{array}{c}
\text{n}
\end{array}
\]

\[
\begin{array}{c}
\text{a} = (4x + 1)^\circ \\
\text{b} = (5x - 6)^\circ \\
\end{array}
\]

13) Lines \( m \) and \( n \) are parallel.

\[
\begin{array}{c}
\text{a}
\end{array}
\]

\[
\begin{array}{c}
\text{b}
\end{array}
\]

\[
\begin{array}{c}
\text{n}
\end{array}
\]

\[
\begin{array}{c}
\text{a} = (3x + 9)^\circ \\
\text{b} = (2x + 76)^\circ \\
\end{array}
\]

Classify the triangle as acute, right, or obtuse and classify it as equilateral, isosceles, or scalene.

14)

15)
The triangles are similar. Find the angle or side that corresponds to the given angle or side in the other triangle.

18) B

19) BA

The triangles are similar. Find the missing side, angle or value of the variable.

20) $\angle B$

$a = 9 \text{ cm}$

$b = 58^\circ$
21) \( \angle Z \).

\[
\begin{array}{c}
A \quad B \\
\downarrow \quad \downarrow \\
C \quad Y \\
\downarrow \\
Z
\end{array}
\]

\( m \angle A = 55^{\circ} \)

22)

\[
\begin{array}{c}
a \\
e \quad x \\
a = 25 \\
b = 24 \\
c = 7 \\
d = 75 \\
e = 72
\end{array}
\]

23)

\[
\begin{array}{c}
c \\
x \\
a \quad b \\
a = 25 \\
b = 75 \\
c = 52
\end{array}
\]

Solve the problem. Round answers to the nearest tenth if necessary.

24) A tree casts a shadow 16 m long. At the same time, the shadow cast by a 62-centimeter-tall statue is 93 cm long. Find the height of the tree.
1.3 Trigonometric Functions

Sketch an angle $\theta$ in standard position such that $\theta$ has the least positive measure and the given point is on the terminal side of $\theta$.

25) $(-5, 3)$

Evaluate the expression.

26) $\cos 450^\circ$

27) $\sin 270^\circ$

If $r$ is a positive number and the point $(x, y)$ is in the indicated quadrant, decide whether the given ratio is positive or negative.

28) II, $\frac{r}{x}$

29) IV, $\frac{r}{y}$

Evaluate the expression.

30) $\sin^2 90^\circ + \cos^2 90^\circ$

31) $4 \tan 360^\circ + 5 \csc 270^\circ$

1.4 Using the Definitions of the Trigonometric Functions

Use the appropriate identity to find the indicated function value. Rationalize the denominator, if applicable. If the given value is a decimal, round your answer to three decimal places.

32) $\csc \theta$, given that $\sin \theta = \frac{1}{7}$

33) $\tan \theta$, given that $\cot \theta = \frac{\sqrt{5}}{6}$
Determine the signs of the given trigonometric functions of an angle in standard position with the given measure.

34) \( \cos (-290^\circ) \) and \( \sin (-290^\circ) \)

Use the fundamental identities to find the value of the trigonometric function.

35) Find \( \sin \theta \), given that \( \cos \theta = \frac{2}{3} \) and \( \theta \) is in quadrant IV.

36) Find \( \sec \theta \), given that \( \tan \theta = \frac{3}{4} \) and \( \theta \) is in quadrant I.
Answer Key

Testname: 1720CH1REVIEW

1) 17°
2) 143°
3) 144°8'46"
4) 54°43'14"
5) 56.60°
6) 47°27'36"
7) 475° and -245°
8) 275° and -445°
9) 1800°
10) 43°, 43°
11) 40°, 39°, 101°
12) 29°, 29°
13) 66°, 114°
14) Acute, equilateral
15) Right, scalene
16) Obtuse, scalene
17) Obtuse, isosceles
18) T
19) ST
20) 58°
21) 35°
22) x = 21
23) x = 39
24) 10.7 m
Answer Key
Testname: 1720CH1REVIEW

25)

26) 0
27) -1
28) Negative
29) Negative
30) 1
31) -5
32) 7
33) \( \frac{6\sqrt{5}}{5} \)
34) positive and positive
35) \( -\frac{\sqrt{5}}{3} \)
36) \( \frac{5}{4} \)