

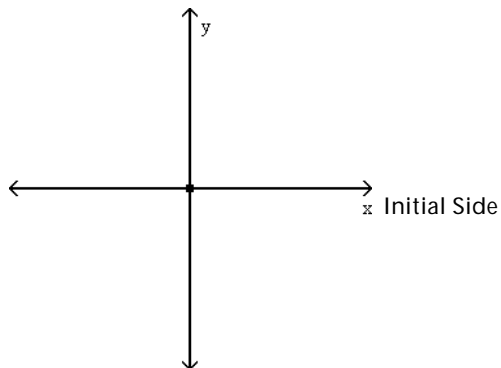
Chapter 14 TECM 119 Practice Test

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

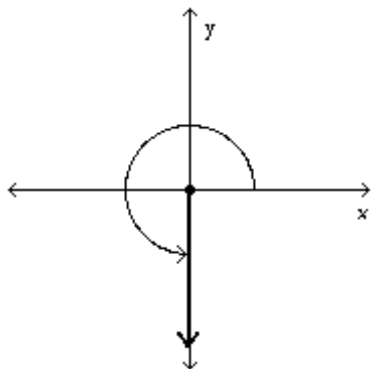
Draw the angle in standard position.

1) 270°

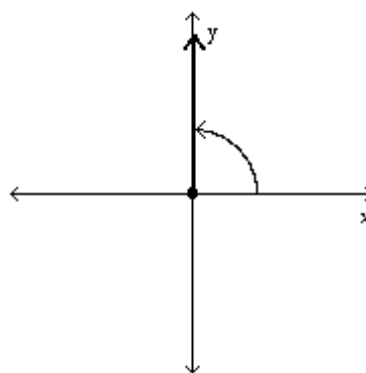
1) _____



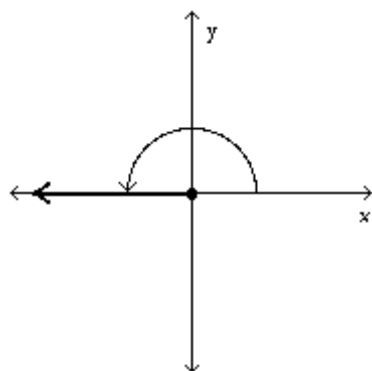
A)



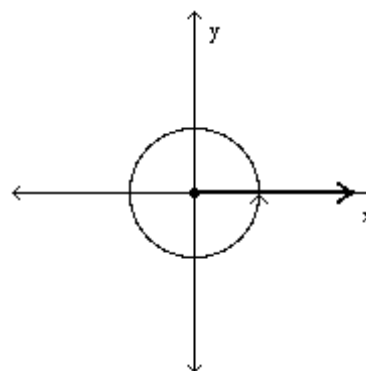
B)



C)



D)



Assume that the terminal side of θ passes through the given point and find the value of the given trigonometric ratio in fractional form.

2) $(12, 16)$; Find $\sin \theta$.

2) _____

A) $\frac{3}{5}$

B) $\frac{3}{4}$

C) $\frac{4}{3}$

D) $\frac{4}{5}$

3) (-8, 7); Find $\cot \theta$.

A) $\frac{7}{11}$

B) $-\frac{8}{11}$

C) $-\frac{7}{8}$

D) $-\frac{8}{7}$

3) _____

4) (15, 20); Find $\cos \theta$.

A) $\frac{4}{3}$

B) $\frac{3}{4}$

C) $\frac{3}{5}$

D) $\frac{4}{5}$

4) _____

Determine the algebraic sign of the given trigonometric function.

5) $\cos 271^\circ$

A) Positive

B) Negative

5) _____

6) $\sin(-1078^\circ)$

A) Negative

B) Positive

6) _____

7) $\cos(-1325^\circ)$

A) Negative

B) Positive

7) _____

Find the value of the trigonometric function.

8) $\sin 818^\circ$

A) 0.79

B) 0.93

C) -0.14

D) 0.99

8) _____

9) $\tan 421^\circ$

A) 1.8

B) -57

C) 0.48

D) 0.60

9) _____

10) $\sin 56.4^\circ$

A) 0.553

B) -0.148

C) 0.833

D) 1.51

10) _____

Solve the problem.

11) The time for a tennis ball to reach its maximum height is given by $t = \frac{v \sin a}{g}$. If the speed of a

11) _____

tennis ball v is 31 m/s and the acceleration due to gravity is 9.8 m/s^2 , determine the time of flight for the ball for a 50.0° angle of elevation. Round results to an appropriate number of significant digits.

A) 2.6 s

B) 0.77

C) 24 s

D) 2.4 s

12) A formula for determining the area of a triangle, knowing sides a and b and angle

12) _____

C is $\text{Area} = \frac{1}{2} ab \sin C$. determine the area of a triangle for which $a = 26.5 \text{ ft}$, $b = 46.4 \text{ ft}$, and $C =$

53.2° . Round results to an appropriate number of significant digits.

A) 11 ft^2

B) 492 ft^2

C) 19 ft^2

D) 985 ft^2

Solve the triangle with the given parts by use of the Law of Sines.

13) $c = 9$, $A = 21^\circ$, $B = 58^\circ$

13) _____

A) $C = 101^\circ$, $a = 3.3$, $b = 7.8$

B) $C = 101^\circ$, $a = 24.7$, $b = 7.8$

C) $C = 101^\circ$, $a = 3.3$, $b = 21.3$

D) $C = 101^\circ$, $a = 24.7$, $b = 21.3$

- 14) $b = 6, A = 34^\circ, B = 69^\circ$ 14) _____
 A) $C = 77^\circ, a = 3.6, c = 6.3$ B) $C = 13^\circ, a = 10, c = 10.5$
 C) $C = 77^\circ, a = 10, c = 6.3$ D) $C = 77^\circ, a = 10, c = 10.5$

- 15) $a = 13.33, b = 26.66, A = 30.0^\circ$ 15) _____
 A) $B = 90.0^\circ, C = 60.0^\circ, c = 23.09$ B) $B = 60.0^\circ, C = 60.0^\circ, c = 23.09$
 C) $B = 60.0^\circ, C = 90.0^\circ, c = 23.09$ D) No solution

- 16) $b = 45, c = 63, C = 103^\circ$ 16) _____
 A) $B = 89.1^\circ, A = 77.9^\circ, a \approx 35.1$ B) $B = 44.1^\circ, A = 32.9^\circ, a \approx 35.1$
 C) $B = 44.1^\circ, A = 77.9^\circ, a \approx 35.1$ D) No solution

Solve the problem.

- 17) Lookout station B is located 5 mi due east of station A. The direction of a fire from A is $10^\circ 10'$ W of S and the direction from B is $31^\circ 20'$ W of S. Determine the distance from the fire to B (to the nearest tenth of a mile). 17) _____
 A) 8.8 mi B) 6.8 mi C) 13.6 mi D) 15.6 mi

Use the Law of Cosines to solve the triangles with the given parts.

- 18) $a = 4.90, b = 8.97, C = 114.4^\circ$ 18) _____
 A) $c = 14.8, A = 24^\circ, B = 41.6^\circ$ B) $c = 17.7, A = 20^\circ, B = 45.6^\circ$
 C) $c = 11.9, A = 22^\circ, B = 43.6^\circ$ D) No solution

- 19) $a = 8.6, b = 13.8, c = 16.0$ 19) _____
 A) $A = 32.49^\circ, B = 59.54^\circ, C = 87.97^\circ$ B) $A = 30.49^\circ, B = 59.54^\circ, C = 89.97^\circ$
 C) $A = 34.49^\circ, B = 57.54^\circ, C = 87.97^\circ$ D) No solution

Solve the problem.

- 20) An airplane leaves an airport and flies due west 180 miles and then 250 miles in the direction $190^\circ 50'$. Assuming the earth is flat, how far is the plane from the airport at this time (to the nearest mile)? 20) _____
 A) 398 mi B) 418 mi C) 428 mi D) 388 mi

Chapter 14 TECM 119 Practice Test

Answer Key

- 1) A
- 2) D
- 3) D
- 4) C
- 5) A
- 6) B
- 7) A
- 8) D
- 9) A
- 10) C
- 11) D
- 12) B
- 13) A
- 14) A
- 15) A
- 16) B
- 17) C
- 18) C
- 19) A
- 20) C