

Find a positive angle less than 360° or 2π that is coterminal with the given angle.

1) $-\frac{2\pi}{9}$

1) _____

A) $\frac{34\pi}{9}$

B) $\frac{2\pi}{9}$

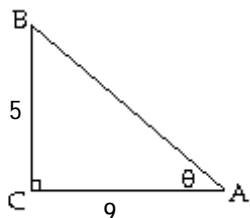
C) $\frac{16\pi}{9}$

D) $\frac{25\pi}{9}$

Use the Pythagorean Theorem to find the length of the missing side. Then find the indicated trigonometric function of the given angle. Give an exact answer with a rational denominator.

2) Find $\cos \theta$.

2) _____



A) $\frac{\sqrt{106}}{9}$

B) $\frac{5\sqrt{106}}{106}$

C) $\frac{9\sqrt{106}}{106}$

D) $\frac{\sqrt{106}}{5}$

Solve the problem.

3) A building 150 feet tall casts a 70 foot long shadow. If a person stands at the end of the shadow and looks up to the top of the building, what is the angle of the person's eyes to the top of the building (to the nearest hundredth of a degree)? (Assume the person's eyes are 6 feet above ground level.)

3) _____

A) 60.91°

B) 29.09°

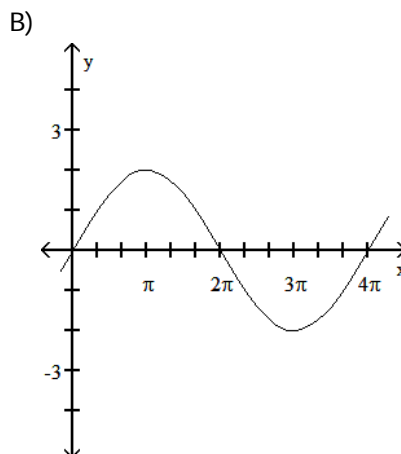
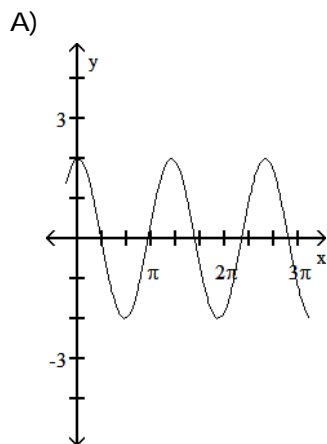
C) 64.98°

D) 64.08°

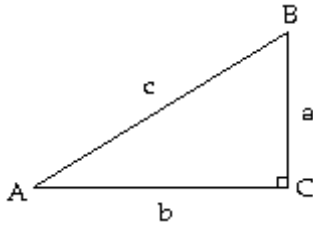
Graph the function.

4) $y = 2 \sin \frac{1}{2}x$

4) _____



Solve the right triangle shown in the figure. Round lengths to one decimal place and express angles to the nearest tenth of a degree.



5) $A = 38^\circ, b = 41.4$

A) $B = 52^\circ, a = 53, c = 67.2$

C) $B = 38^\circ, a = 53, c = 32.6$

B) $B = 38^\circ, a = 32.6, c = 32.3$

D) $B = 52^\circ, a = 32.3, c = 52.5$

5) _____

Complete the identity.

6) $\frac{(\sin x + \cos x)^2}{1 + 2 \sin x \cos x} = ?$

A) 0

B) $1 - \sin x$

C) $-\sec^2 x$

D) 1

6) _____

7) $\cos\left(\frac{3\pi}{2} - x\right) = ?$

A) $\cos x$

B) $-\sin x$

C) $-\cos x$

D) $\sin x$

7) _____

Use the given information to find the exact value of the expression.

8) $\sin \alpha = \frac{20}{29}$, α lies in quadrant II, and $\cos \beta = \frac{8}{17}$, β lies in quadrant I Find $\sin(\alpha - \beta)$.

A) $-\frac{132}{493}$

B) $-\frac{155}{493}$

C) $\frac{475}{493}$

D) $\frac{468}{493}$

8) _____

Complete the identity.

9) $\tan(\pi - \theta) = ?$

A) $\tan \theta$

B) $\cot \theta$

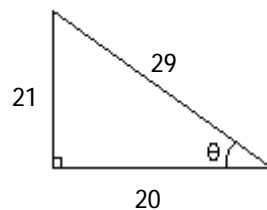
C) $-\tan \theta$

D) $-\cot \theta$

9) _____

Use the figure to find the exact value of the trigonometric function.

10) Find $\sin 2\theta$.



A) $\frac{840}{841}$

B) $\frac{41}{841}$

C) $-\frac{40}{841}$

D) $-\frac{41}{841}$

10) _____

Solve the equation on the interval $0 \leq \theta < 2\pi$.

11) $2 \cos \theta + 2\sqrt{3} = \sqrt{3}$

A) $\left\{\frac{2\pi}{3}, \frac{4\pi}{3}\right\}$

B) $\left\{\frac{2\pi}{3}, \frac{5\pi}{3}\right\}$

C) $\left\{\frac{5\pi}{6}, \frac{7\pi}{6}\right\}$

D) $\left\{\frac{7\pi}{6}, \frac{11\pi}{6}\right\}$

11) _____

Solve the equation on the interval $[0, 2\pi)$.

12) $\cos 2x = \frac{\sqrt{3}}{2}$

12) _____

A) $\frac{3\pi}{2}$

B) $\frac{\pi}{2}$

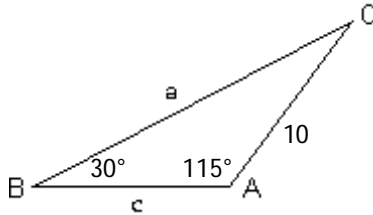
C) $\frac{\pi}{12}, \frac{11\pi}{12}, \frac{13\pi}{12}, \frac{23\pi}{12}$

D) $\frac{\pi}{6}, \frac{11\pi}{6}$

Solve the triangle using law of sines.

13)

13) _____



A) $C = 35^\circ, a = 18.13, c = 11.47$

B) $C = 40^\circ, a = 18.13, c = 11.47$

C) $C = 30^\circ, a = 11.47, c = 18.13$

D) $C = 35^\circ, a = 11.47, c = 18.13$

Find the area of the triangle having the given measurements. Round to the nearest square unit.

14) $B = 25^\circ, a = 3$ feet, $c = 7$ feet

14) _____

A) 18 square feet

B) 10 square feet

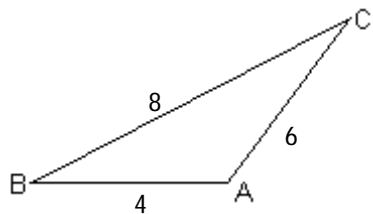
C) 4 square feet

D) 9 square feet

Find angle A using the law of cosines.

15)

15) _____



A) $A = 57^\circ,$

B) $A = 47^\circ,$

C) $A = 104^\circ$

D) $A = 114^\circ,$

Polar coordinates of a point are given. Find the rectangular coordinates of the point.

16) $(-3, -90^\circ)$

16) _____

A) $(0, -3)$

B) $(3, 0)$

C) $(-3, 0)$

D) $(0, 3)$

Convert the rectangular equation to a polar equation that expresses r in terms of θ .

17) $2x - 5y + 12 = 0$

17) _____

A) $2 \cos \theta - 5 \sin \theta = -12$

B) $r = \frac{-12}{(2 \cos \theta - 5 \sin \theta)}$

C) $r = \frac{-12}{(2 \sin \theta - 5 \cos \theta)}$

D) $2 \cos \theta - 5 \sin \theta = 12$

Convert the polar equation to a rectangular equation.

18) $r = 7$

18) _____

A) $y^2 = 49$

B) $x^2 + y^2 = 49$

C) $x = 7$

D) $y = 7$

Find the specified vector or scalar.

19) $u = -11i - 2j$, $v = 8i + 7j$; Find $u - v$.

A) $-3i + 5j$

B) $-19i - 9j$

C) $-20i + 5j$

D) $-21i + 5j$

19) _____

Find the unit vector that has the same direction as the vector v .

20) $v = 3i + 4j$

A) $u = 15i + 20j$

B) $u = \frac{5}{3}i + \frac{5}{4}j$

C) $u = \frac{3}{5}i + \frac{4}{5}j$

D) $u = -\frac{4}{5}i - \frac{3}{5}j$

20) _____

Find the angle between the given vectors. Round to the nearest tenth of a degree.

21) $u = -6i + 5j$, $v = 3i + 9j$

A) 24.3°

B) 68.6°

C) 34.3°

D) 78.6°

21) _____

Eliminate the parameter t . Find a rectangular equation for the plane curve defined by the parametric equations.

22) $x = 2t - 1$, $y = t^2 + 3$; $-4 \leq t \leq 4$

A) $y = x^2 + 1$; $-2 \leq x \leq 2$

B) $y = \frac{1}{4}x^2 + \frac{1}{2}x + \frac{13}{4}$; $-9 \leq x \leq 7$

C) $y = \frac{1}{2}x^2 + 1$; $-6 \leq x \leq 4$

D) $y = -\frac{1}{2}x + 30$; $-6 \leq x \leq 4$

22) _____

Answer Key

Testname: FINAL_REVIEW_MAC1114

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