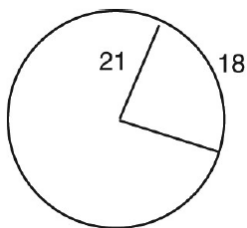


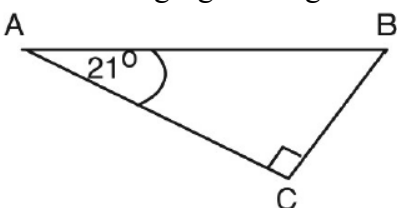
Practice Problems for Final

1. Find the measure, to the nearest degree, of the acute angle in the figure below.



2. Find the area of a sector of a circle intercepted by an angle of 150° in a circle of radius 5.3 cm.

3. Solve the following right triangle:



Solve each equation. Assume that all angles are acute angles.

4. $\sin(4B + 12^\circ) = \cos(6B - 8^\circ)$

5. $\sec(18x) = \csc(6x)$

Graph each of the following for one period:

6. $y = -2 \cos\left(x + \frac{\pi}{4}\right)$

7. $y = \sin\left(x + \frac{\pi}{2}\right) - 1$

8. $y = \tan\left(2x - \frac{\pi}{4}\right)$

Find the inverse (unique) for each of the following:

9. $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

10. $\cot^{-1}\left(-\frac{\sqrt{3}}{3}\right)$

11. $\cos^{-1}\left(\tan\frac{\pi}{3}\right)$

12. Find the exact value of: $3 \sin \frac{\pi}{8} \cos \frac{\pi}{8}$.

Given that $\tan \theta = -\frac{3}{4}$ and θ is in quadrant II, find each of following from 13 to 15:

13. $\sin(2\theta)$

14. $\cos(2\theta)$

15. $\tan(2\theta)$

16. If $\cos \theta = \frac{3}{5}$, and $\sin \theta < 0$, find the exact value of $\cos(2\theta)$.

Solve the equation 17 & 18 below for the solutions in the interval $[0, 2\pi)$:

17. $2 \cos^2 \theta + 1 = 3 \cos \theta$

18. $\cos 2\theta = \sin \theta$

19. For the triangle ABC , where $A = 45.2^\circ$, $B = 68.3^\circ$, $c = 18.9$; find b .

20. For the triangle ABC , where $a = 35.1$ m, $b = 45.7$ m, $c = 29.5$ m; find A .

Answers:

1. 49°

2. 36.8 cm^2

3. $B = 69^\circ$, $a = 54$, $b = 140$

4. 8.6

5. 3.75

6 – 8: check online

9. $-\frac{\pi}{3}$

10. $-\frac{\pi}{3}$

11. Undefined.

12. $\frac{3\sqrt{2}}{4}$

13. $-\frac{24}{25}$

14. $\frac{7}{25}$

15. $-\frac{24}{7}$

16. $-\frac{7}{25}$

17. $0^\circ, 60^\circ, 300^\circ$

18. $30^\circ, 150^\circ, 270^\circ$

19. 19.2 m

20. 50.2°