

Unit 3 Review

Date _____ Period _____

Find the exact value of each expression.

1) $\tan^{-1} 0$

2) $\sin^{-1} -\frac{\sqrt{3}}{2}$

3) $\tan^{-1} \frac{\sqrt{3}}{3}$

4) $\cos^{-1} -\frac{1}{2}$

5) $\sin^{-1} \frac{\sqrt{2}}{2}$

6) $\cos^{-1} 0$

7) $\tan^{-1} \left(\cos \frac{\pi}{2} \right)$

8) $\tan^{-1} \left(\tan \frac{\pi}{3} \right)$

9) $\sin^{-1} (\sec \pi)$

10) $\sin \cos^{-1} \frac{\sqrt{2}}{2}$

Write each trigonometric expression as an algebraic expression.

11) $\sin \cos^{-1} x$

12) $\csc \tan^{-1} x$

13) $\sin \tan^{-1} x$

14) $\cos \cos^{-1} x$

Use Law of Sines and/or Law of Cosines to solve each triangle. Remember to check for the possibility of multiple triangles if you are given SSA.

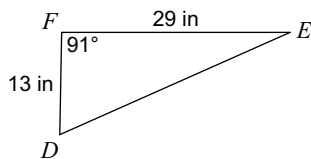
15) In $\triangle BCA$, $m\angle C = 30^\circ$, $m\angle A = 88^\circ$, $c = 13$ m

16) In $\triangle YZX$, $m\angle Y = 27^\circ$, $x = 30$ in, $y = 22$ in

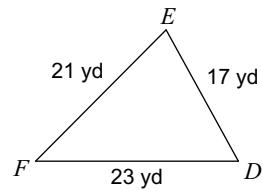
17) In $\triangle XYZ$, $m\angle Z = 110^\circ$, $z = 20$ km, $y = 9$ km

18) In $\triangle QRP$, $m\angle Q = 98^\circ$, $p = 11$ in, $q = 9$ in

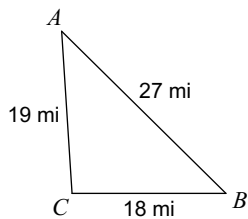
19)



20)

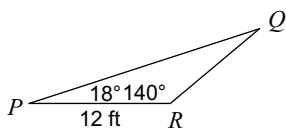


21)

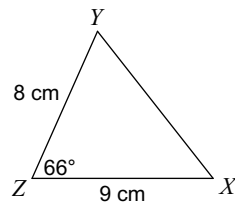


Find the area of each triangle to the nearest tenth.

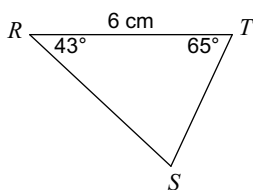
22)



23)



24)



Answers to Unit 3 Review

1) 0

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

3) $\frac{\pi}{6}$

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

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

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

7) 0

8) $\frac{\pi}{3}$

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

10) $\frac{\sqrt{2}}{2}$

11) $\sqrt{1-x^2}$

12) $\frac{\sqrt{1+x^2}}{x}$

13) $\frac{x}{\sqrt{1+x^2}}$

14) x

15) $m\angle B = 62^\circ, a = 26 \text{ m}, b = 23 \text{ m}$

16) $m\angle Z = 114.8^\circ, m\angle X = 38.2^\circ, z = 44 \text{ in}$

17) $m\angle X = 45^\circ, m\angle Y = 25^\circ, x = 15 \text{ km}$

Or $m\angle Z = 11.2^\circ, m\angle X = 141.8^\circ, z = 9.4 \text{ in}$

18) Not a triangle

19) $m\angle D = 65^\circ, m\angle E = 24^\circ, f = 32 \text{ in}$

20) $m\angle F = 45.2^\circ, m\angle D = 61.2^\circ, m\angle E = 73.6^\circ$

21) $m\angle A = 41.7^\circ, m\angle B = 44.6^\circ, m\angle C = 93.7^\circ$

22) 38.2 ft^2

23) 32.9 cm^2

24) 11.7 cm^2