

[trigonometry review]

- 1. From atop a 40 m cliff the angle of depression to a boat at sea is 25°. Determine, to the nearest metre, the distance of the boat from the base of the cliff.
- 2. Determine the 6 trig ratios of a position angle whose terminal arm passes through (-3, 5).
- 3. Given $\triangle ABC$ with
 - a. $a = 7, b = 12, c = 6, \text{ find } \angle B$
 - b. $a = 5, b = 4, \angle C = 80^{\circ}$, find c
 - c. $\angle A = 32^{\circ}, \angle B = 110^{\circ}, c = 88$, find a
 - d. c = 42, b = 35, $\angle B = 47^{\circ}$, find $\angle C$
- 4. Two hunters, A and B, are in separate duck blinds 100 m apart. A duck lands in the water. The angle between hunter A and the duck is 65° and between hunter B and the duck is 40°. Find the distance between each hunter and the duck.
- 5. A fan in the upper deck of the Skydome, sees the guarterback at an angle of depression of 65°, while the pass receiver 40 yards down field has an angle of depression of 32°. How high above the field level is the fan sitting?
- 6. Convert from radians to degrees:

a.
$$\frac{3\pi}{4}$$

b.
$$-\frac{2\pi}{2}$$

- 7. Convert from degrees to radians:
 - a. 315°

8. Sketch one wave of each:

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

- b. $y = -3\cos 2x$
- 9. Sketch for x_{i} , $-2\pi \le x \le 2\pi$

a.
$$y = \sec x$$

b. $y = \tan x$

C. $y = \frac{1}{2} \sin 3 \left(x - \frac{\pi}{c} \right)$

d. $y = -\cos(2x + \pi)$

c. 5 **d.** 2

c. 90° d. 33°

10. Evaluate. Exact answers only (i.e. answers in fraction form) d. $\sin^2 \frac{\pi}{4} + \cos^2 \frac{\pi}{4}$ e. $\tan \frac{5\pi}{6}$

a.
$$\sin \frac{5\pi}{4}$$

b. $\tan \frac{3\pi}{2}$

$$\cos \frac{57}{3}$$

- 11. A pulley makes 20 rotations in 30 s.
 - a. Find the angular velocity in radians/s.
 - b. How far does a point 3 cm from the centre travel in 2 s?
- 12. Write the equation of a sine curve with amplitude 2, period π , and phase shift $\frac{\pi}{4}$ left.

worksheets



13. Solve: $0 \le x \le 2\pi$

a. $\sin x = -\frac{\sqrt{3}}{2}$ b. $\cos x = -\frac{1}{2}$

14. Prove each identity:

a.
$$\frac{\tan x}{\sin x} = \sec x$$

b. $\frac{1+\tan^2 x}{1+\cot^2 x} = \tan^2 x$
c. $\frac{1}{1-\cos} + \frac{1}{1+\cos} = 2\csc^2 x$

C.
$$(\tan x + \sqrt{3})(\sqrt{3}\tan x - 1) = 0$$

d. $\sqrt{2}\sin^2 x + \sin x = 0$



