

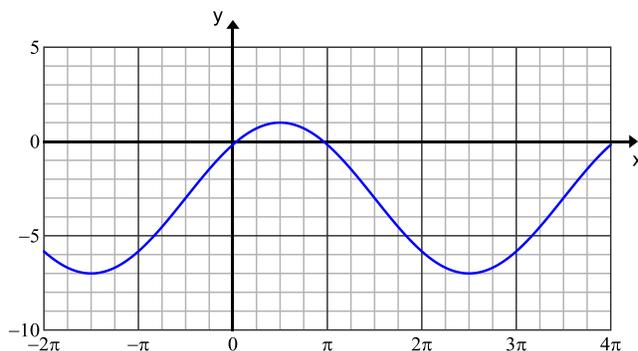
MAH Ch 9 Trig Review WS

Do all work on a separate sheet.

- A rescue team 1000 ft. away from the base of a vertical cliff measures the angle of elevation to the top of the cliff to be 70° . A climber is stranded on a ledge. The angle of elevation from the rescue team to the ledge is 55° . How far is the stranded climber from the top of the cliff?
- Angie sees a hot air balloon in the sky from her spot on the ground with an angle of elevation of 40° . If she steps back 200 ft the new angle of elevation is 10° . If Angie is 5.5 ft tall, how far off the ground is the hot air balloon.
- David puts a rock in his sling and starts whirling it around. He realizes that in order for the rock to reach Goliath, it must leave the sling at a speed of 60 feet per second. So he swings the sling in a circular path of radius 4 feet. What must the angular velocity be in order for David to achieve his objective?
- Two pulleys, one with radius 2 inches and the other with radius 8 inches, are connected by a belt. If the 2-inch pulley is rotating at 3 revolutions per minute, determine the revolutions per minute of the 8-inch pulley.
- Draw the first quadrant of the unit circle and mark and label all special angles and their points.
- Find the exact values of the following:
 - $\sin\left(\frac{-3\pi}{4}\right)$
 - $\cos\left(\frac{29\pi}{6}\right)$
 - $\tan(420^\circ)$
 - $\sec\left(\frac{-9\pi}{4}\right)$
 - $\csc(510^\circ)$
 - $\cot\left(\frac{9\pi}{3}\right)$
- Solve the triangles:
 - Given $b = 30, c = 50, C = 60^\circ$
 - Given $a = 12, b = 5, B = 20^\circ$
- During a hike, hikers start at point A and head in a direction 30° west of south to point B. They hike 6 miles from point A to point B. From point B, they hike to point C and then from point C back to point A, which is 8 miles directly north of point C. How many miles did they hike from point B to point C?
- State the amplitude, period, phase shift, and vertical shift for the following functions:
 - $y = -2 \sin(3x - 2\pi) + 5$
 - $f(t) = 3 \tan\left(4x + \frac{6\pi}{5}\right) - 2$

10. Write an equation to model each:

a.



b. The number of minutes of daylight:

Month	Daylight in H:M
Jan	09:55
Feb	10:32
Mar	11:29
Apr	12:35
May	13:35
Jun	14:18
Jul	14:24
Aug	13:49
Sept	12:51
Oct	11:48
Nov	10:46
Dec	10:02

- Draw a picture showing the segments whose lengths represent the six trig functions. Then draw the 3 similar triangles that are used to justify the basic trig identities.