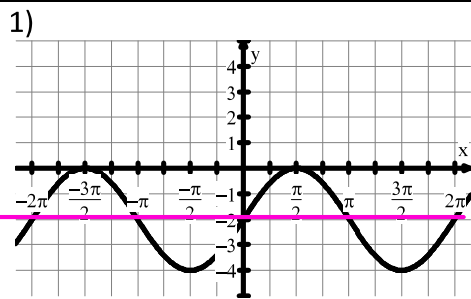


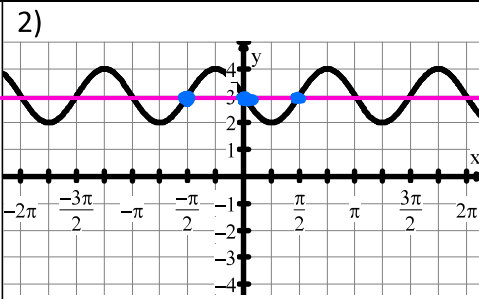
Unit 10 Corrective Assignment – Graphing Trig Functions

Pre-Calculus

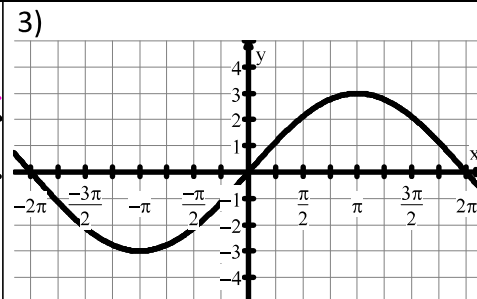
For 1-3, write a SINE function for each graph. If needed use a phase shift, not a negative coefficient.



$$y = 2 \sin \theta - 2$$

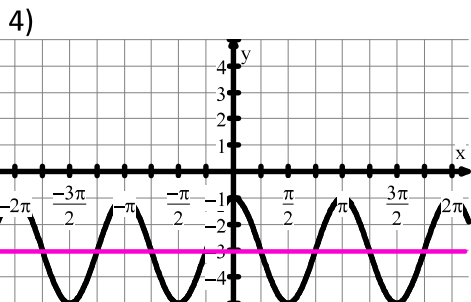


$$y = \sin 2\left(\theta + \frac{\pi}{2}\right) + 3$$

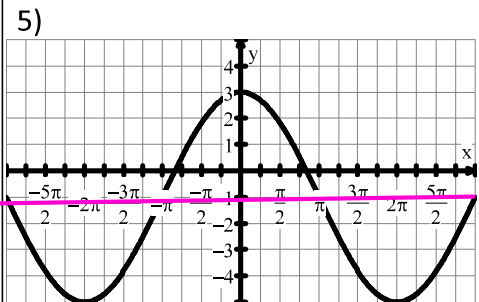


$$y = 3 \sin \frac{1}{2} \theta$$

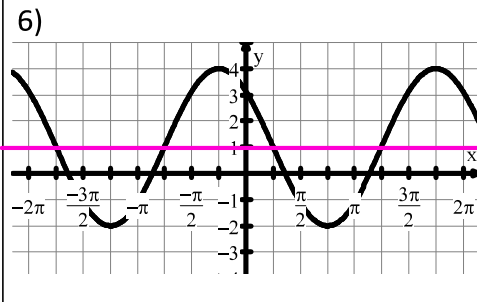
For 4-6, write a COSINE function for each graph. If needed use a phase shift, not a negative coefficient.



$$y = 2 \cos 2\theta - 3$$



$$y = 4 \cos \frac{1}{2} \theta - 1$$



$$y = 3 \cos\left(\theta + \frac{\pi}{4}\right) + 1$$

7) Write the equation of a sine curve with the following transformations:

- Move down 5
- Move right $\frac{\pi}{7}$

$$y = \sin\left(\theta - \frac{\pi}{7}\right) - 5$$

8) Write the equation of a cosine curve with the following transformations:

- One full period occurs 5 times between 0 and 2π .
- Vertical shift up 1.

$$y = \cos 5\theta + 1$$

For 9-10, state the amplitude, period, phase shift, and vertical shift.

9) $y = 2 \sin(\pi x - \pi) - 2$

$$y = 2 \sin \pi(x-1) - 2$$

amp = $|2| = 2$ period = 2

p.s. = 1 v.s. = -2

10) $y = 4 - 3 \cos 5x$

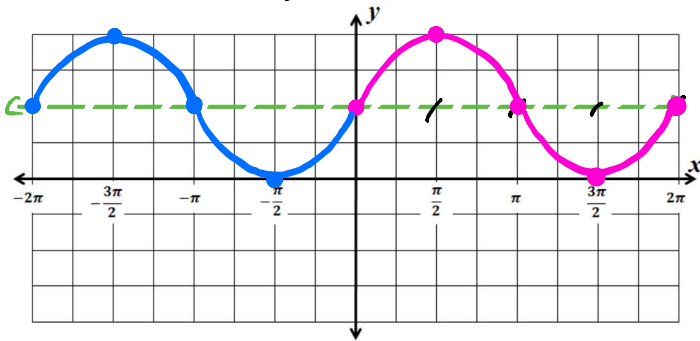
$$y = -3 \cos 5x + 4$$

amp = $| -3 | = 3$ period = $\frac{2\pi}{5}$

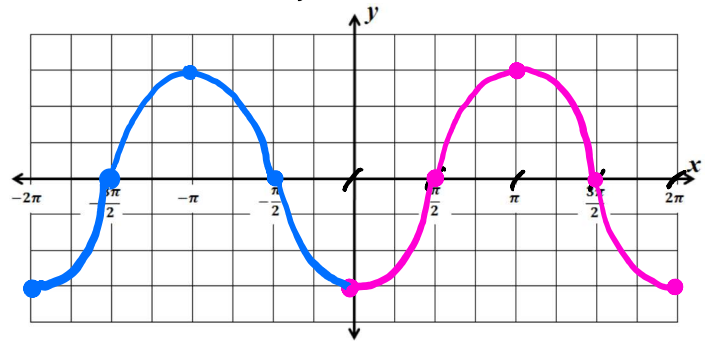
p.s. = 0 v.s. = 4

For 11-18, graph the function. Use the entire grid left to right.

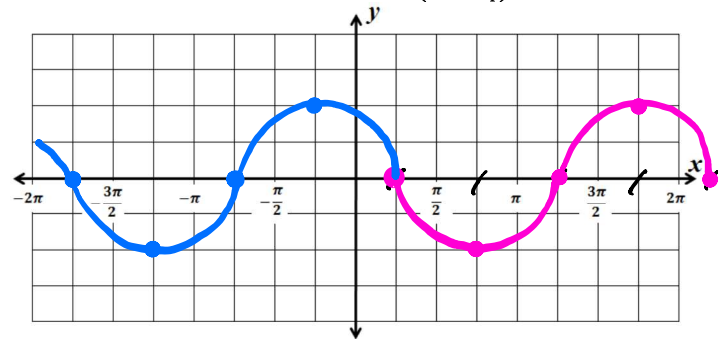
11) $y = 2 \sin x + 2$



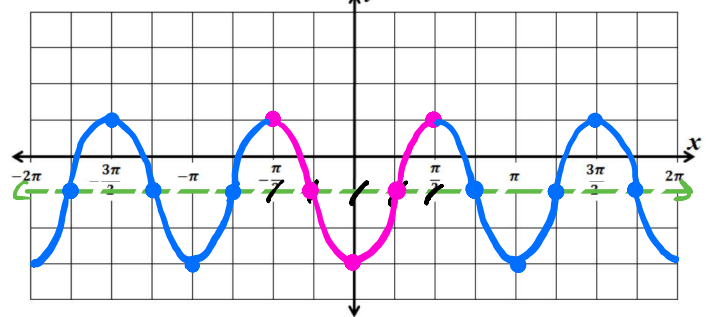
12) $y = -3 \cos x$



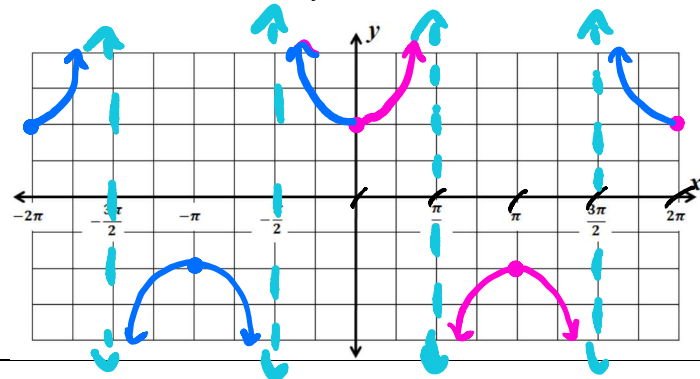
13) $y = -2 \sin\left(x - \frac{\pi}{4}\right)$



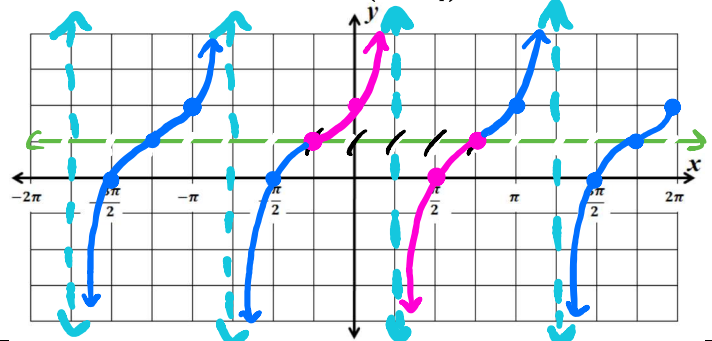
14) $y = 2 \cos(2x + \pi) - 1$
 $y = 2 \cos 2(x + \pi/2) - 1$



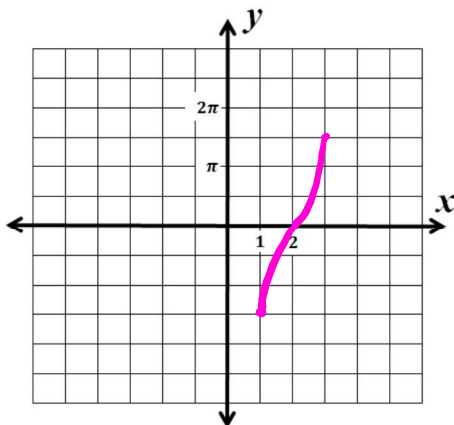
15) $y = 2 \sec x$



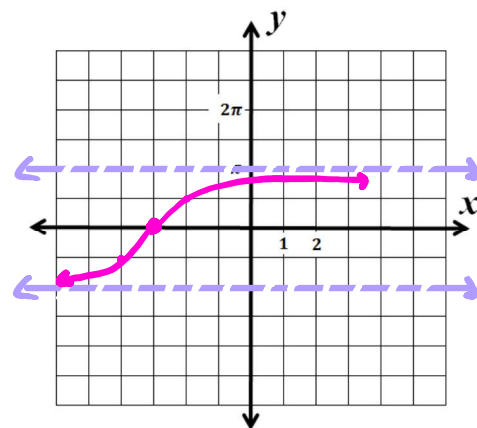
16) $y = \tan\left(x + \frac{\pi}{4}\right) + 1$



17) $y = 3 \sin^{-1}(x - 2)$

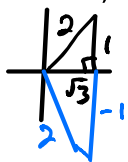


18) $y = 2 \tan^{-1}(x + 3)$



For 19 – 21, find the exact value of the expression.

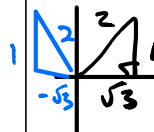
19) $\sin(\arccos(\frac{\sqrt{3}}{2})) = \pm \frac{1}{2}$



20) $\cos(\arctan(0)) = \pm \frac{1}{1} = \pm 1$



21) $\tan(\sin^{-1}(\frac{1}{2})) = \pm \frac{1}{\sqrt{3}} = \pm \frac{\sqrt{3}}{3}$



For 22 – 24, find the approximate value by using a calculator. Use degree mode.

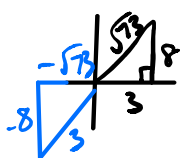
22) $\sec^{-1}(\frac{7}{5}) = \cos^{-1}(\frac{5}{7})$
 $\approx 44.415^\circ$

23) $\csc(75^\circ) = \frac{1}{\sin 75^\circ}$
 ≈ 1.035

24) $\cot^{-1}(4) = \tan^{-1}(\frac{1}{4})$
 $\approx 14.036^\circ$

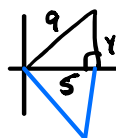
For 25 – 27, use a reference triangle to find the exact value of the expression. Draw a triangle!

25) $\cos(\tan^{-1}(\frac{8}{3})) = \pm \frac{3}{\sqrt{73}} = \pm \frac{3\sqrt{73}}{73}$



$x^2 + y^2 = r^2$
 $(3)^2 + (8)^2 = r^2$
 $9 + 64 = r^2$
 $73 = r^2$
 $\pm \sqrt{73} = r$

26) $\csc(\operatorname{arcsec} \frac{9}{5}) = \pm \frac{9}{2\sqrt{14}} = \pm \frac{9\sqrt{14}}{28}$



$x^2 + y^2 = r^2$
 $(5)^2 + y^2 = (9)^2$
 $25 + y^2 = 81$
 $y^2 = 56$
 $y = \pm \sqrt{56}$
 $y = 2\sqrt{14}$

27) $\sin(\csc^{-1} 5) = \frac{1}{5}$ hint: $5 = \frac{5}{1}$
 Reciprocals

Answers to Unit 10 Corrective Assignment

1) $y = 2 \sin(x) - 2$	2) $y = \sin(2x - \pi) + 3$	3) $y = 3 \sin(\frac{1}{2}x)$	4) $y = 2 \cos(2x) - 3$
5) $y = 4 \cos(\frac{1}{2}x) - 1$	6) $y = 3 \cos(x + \frac{\pi}{4}) + 1$	7) $y = \sin(x - \frac{\pi}{7}) - 5$	8) $y = \cos(5x) + 1$
9) amp = 2; period = 2; p.s. = right 1; v.s. = down 2	10) amp = 3; period = $\frac{2\pi}{5}$; p.s. = none; v.s. = up 4	11)	12)
13)	14)	15)	16)
17)	18)	19) $\frac{1}{2}$	20) 1
		21) $\frac{\sqrt{3}}{3}$	22) 44.415°
		23) 1.035	24) 14.036°
		25) $\frac{3\sqrt{73}}{73}$	26) $\frac{9\sqrt{14}}{28}$
		27) $\frac{1}{5}$	