Transformations of y = sin x

Worksheet Answers

1 a. possible equations:

$-1/5(y - 6) = \sin 4x$

$1/5(y - 6) = \sin 4(x - \pi/4)$

$-1/5(y - 6) = \sin 4(x - \pi/2)$

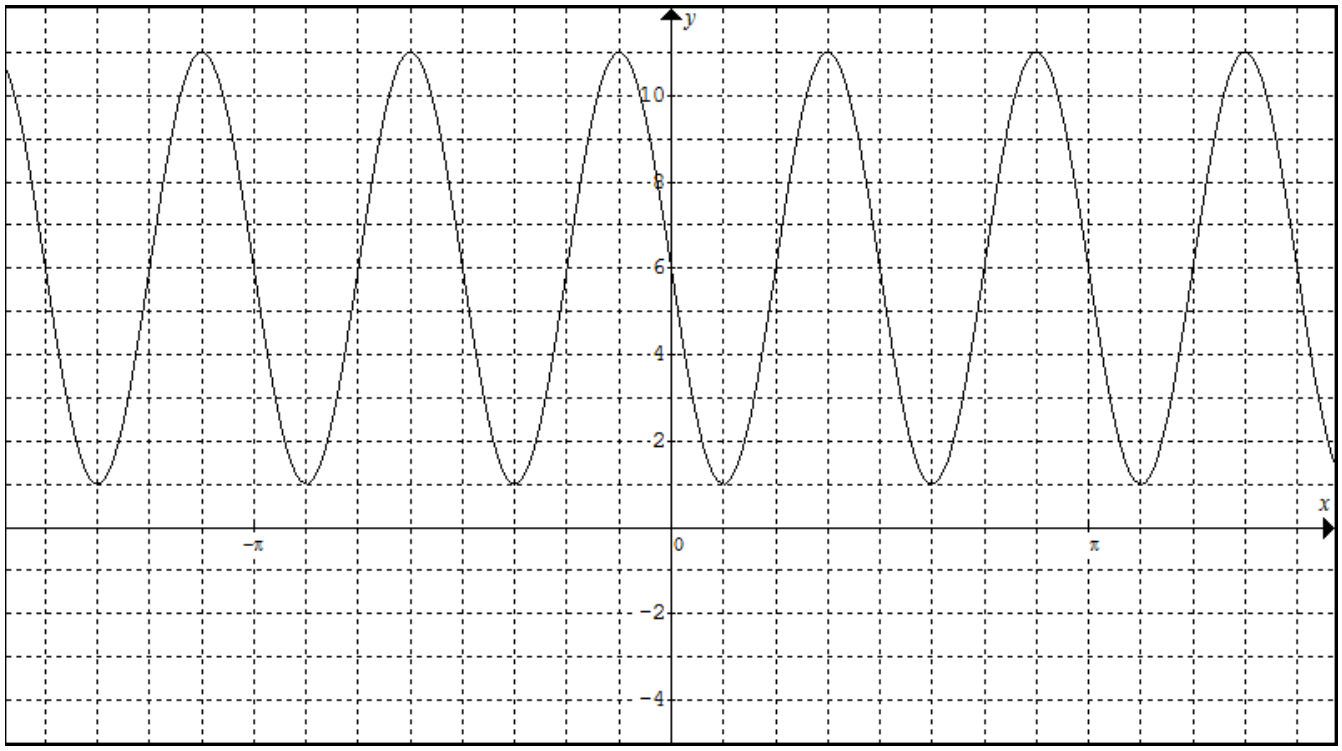
b. possible equations:

$4(y + 1) = \sin 1/3(x - 480^\circ)$

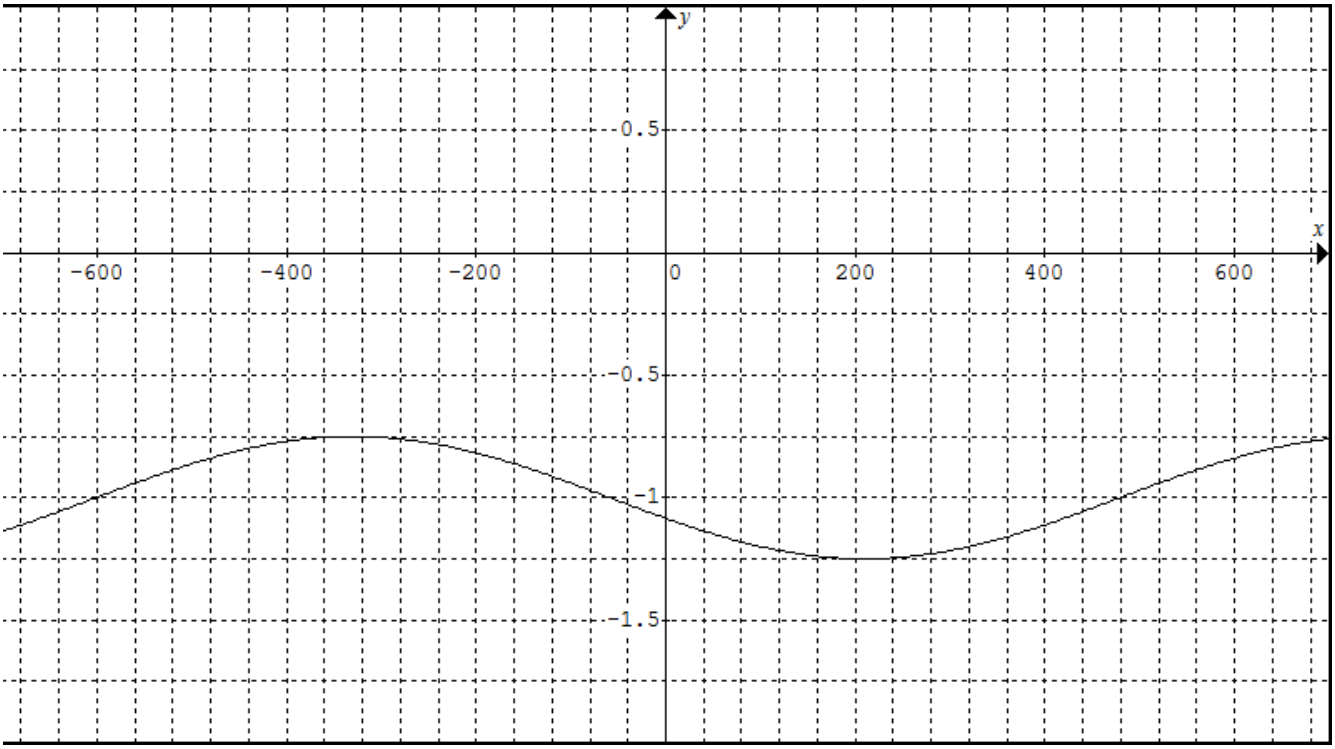
$4(y + 1) = \sin 1/3(x + 600^\circ)$

$-4(y + 1) = \sin 1/3(x + 60^\circ)$

1 a.

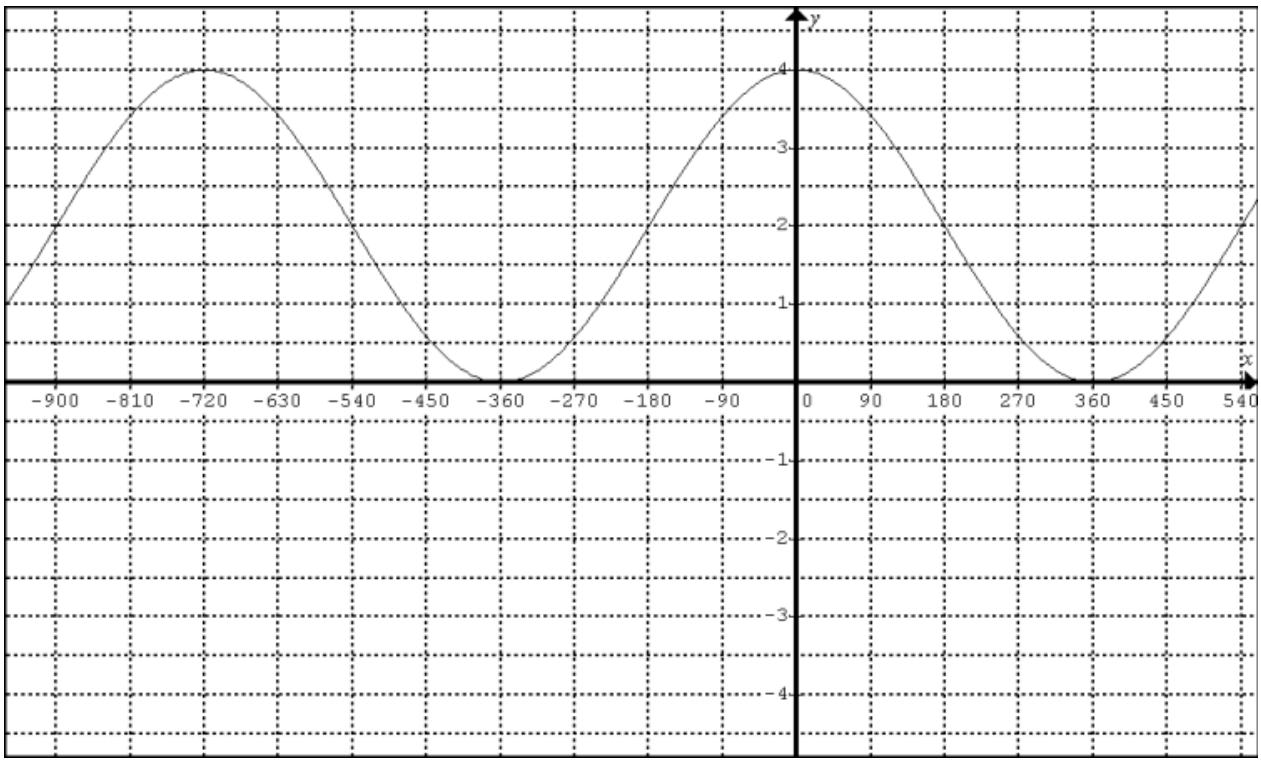


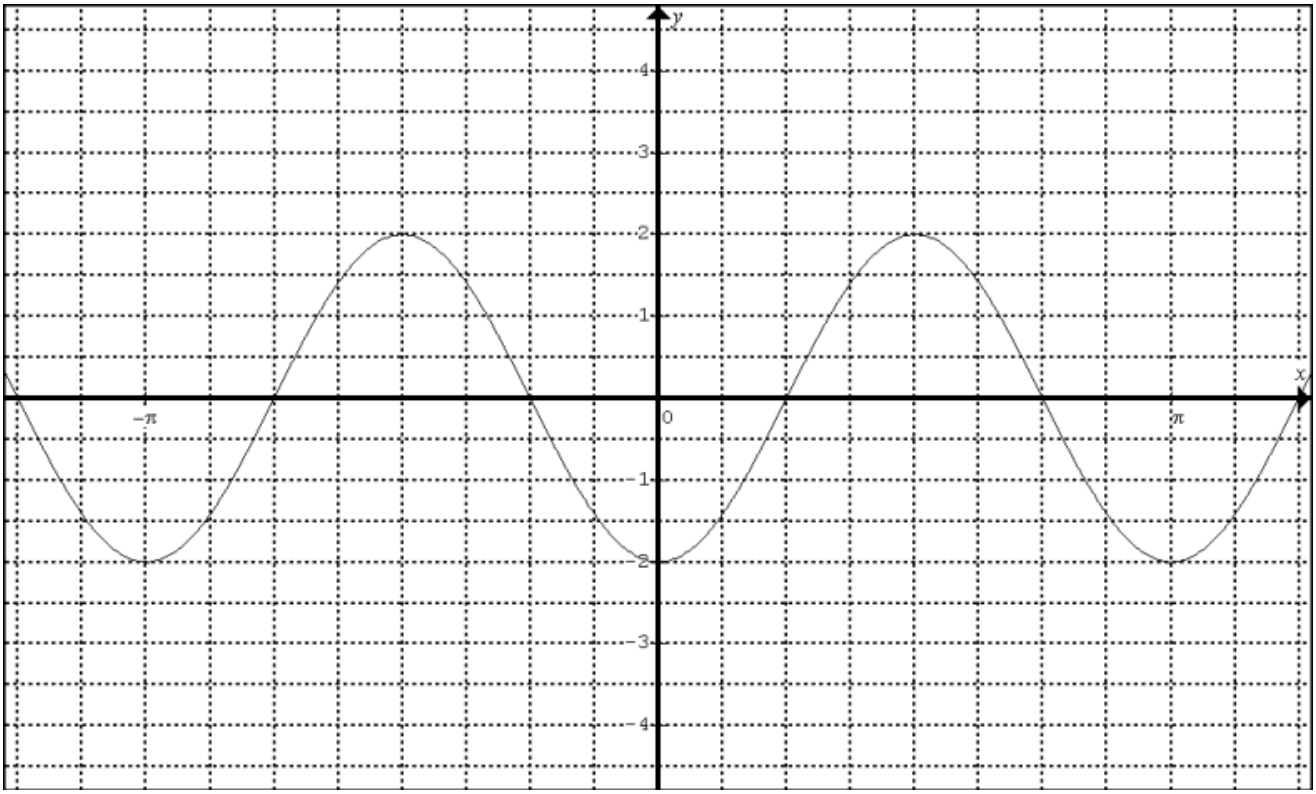
1 b.



2.

FUNCTION	$3-2\sin(\frac{1}{2}x-90^\circ)=y+1$	$2y=-4\sin(2\theta+\frac{\pi}{2})$
Transformational Form	$-\frac{1}{2}(y-2)=\sin\frac{1}{2}(x-180^\circ)$	$-\frac{1}{2}y=\sin 2(\theta+\frac{\pi}{4})$
Reflection	yes	yes
Vertical Stretch Factor	2	2
Horizontal Stretch Factor	2	$\frac{1}{2}$
Vertical Shift	2 units up	none
Horizontal Shift	180° right	$\frac{\pi}{4}$ left
Amplitude	2	2
Period	720°	π
Sinusoidal Axis	$y=2$	$y=0$
Mapping Rule	$(x,y)\to(2x+180^\circ,-2y+2)$	$(x,y)\to(\frac{1}{2}x-\frac{\pi}{4},-2y)$


y
x
4
3
2
1
-1
-2
-3
-4
-900
-810
-720
-630
-540
-450
-360
-270
-180
-90
0
90
180
270
360
450
540


y
x
4
3
2
1
0
−1
−2
−3
−4
−π
π