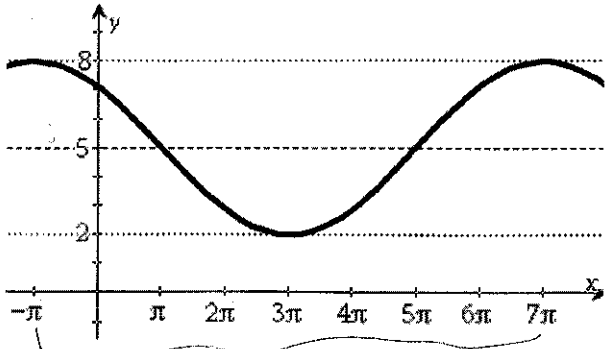
Trig Graphing – WS 4

Name Key

Write an equation for each sinusoid graphed below. You may write sine or cosine functions.

1.

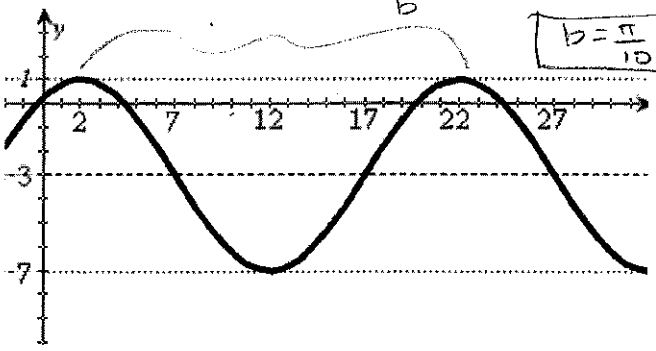


$Pd = 8\pi = \frac{2\pi}{b}$

$8\pi b = 2\pi$

$b = \frac{1}{4}$

2.

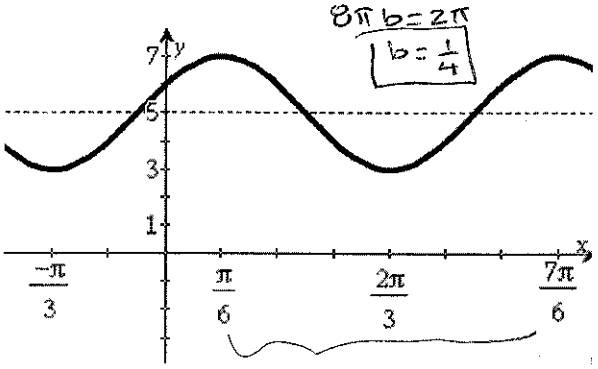


$Pd = 20 = \frac{2\pi}{b}$

$20b = 2\pi$

$b = \frac{\pi}{10}$

3.

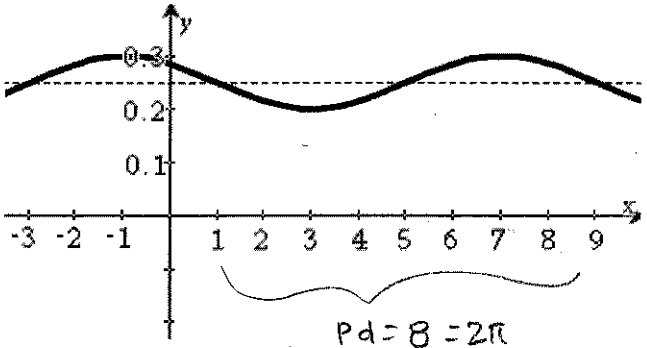


$Pd = \pi = \frac{2\pi}{b}$

$\pi b = 2\pi$

$b = 2$

4.

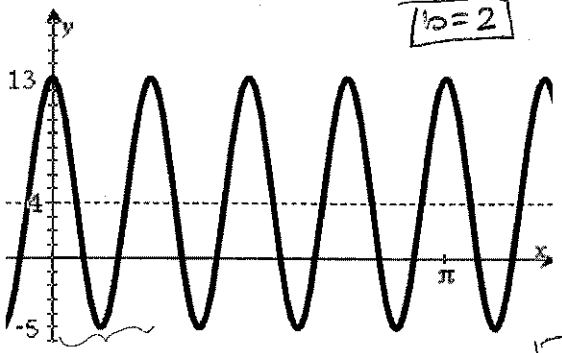


$Pd = 8 = \frac{2\pi}{b}$

$8b = 2\pi$

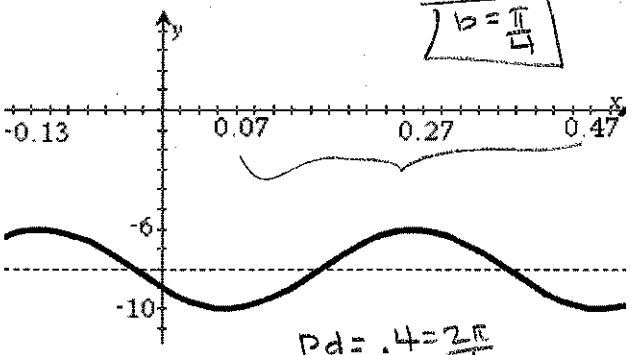
$b = \frac{\pi}{4}$

5.



$Pd = \frac{\pi}{4} = \frac{2\pi}{b} \rightarrow \pi b = 8\pi \rightarrow b = 8$

6.

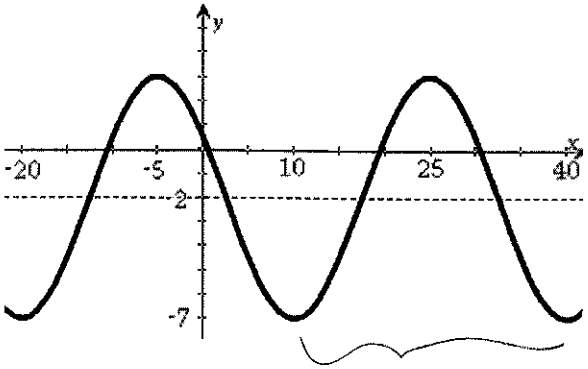


$Pd = .4 = \frac{2\pi}{b}$

$.4b = 2\pi$

$b = 5\pi$

7.

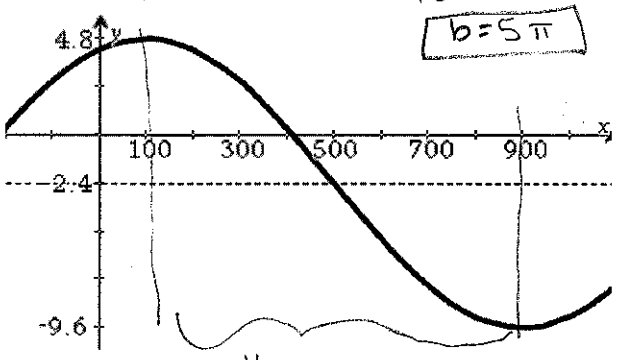


$Pd = 30 = \frac{2\pi}{b}$

$30b = 2\pi$

$b = \frac{\pi}{15}$

8.



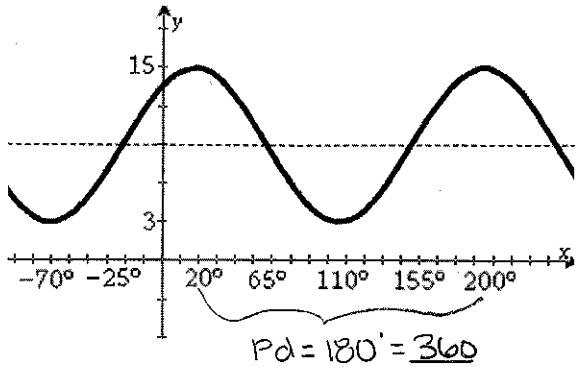
$\frac{1}{2}\,pd = 800$

$1\,pd = 1600 = \frac{2\pi}{b}$

$1600b = 2\pi$

$b = \pi/800$

9.

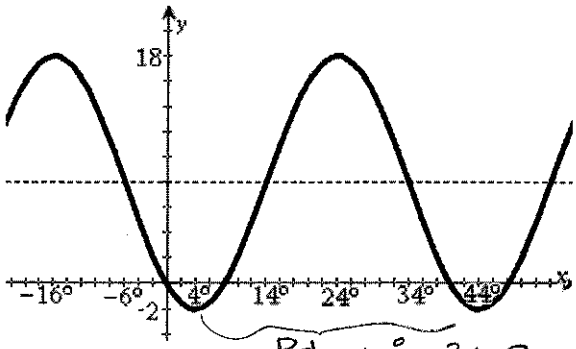


$Pd = 180° = \frac{360}{b}$

$180b = 360$

$b = 2$

10.

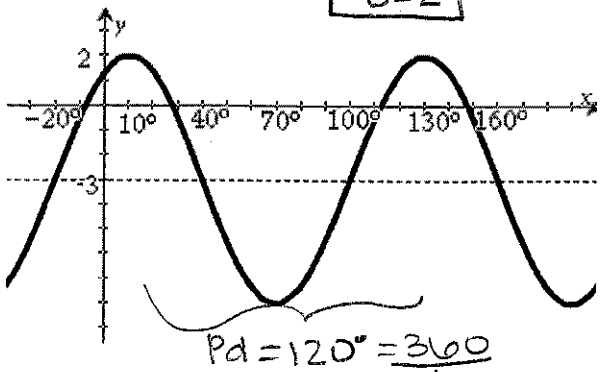


$Pd = 40° = \frac{360}{b}$

$40b = 360$

$b = 9$

11.

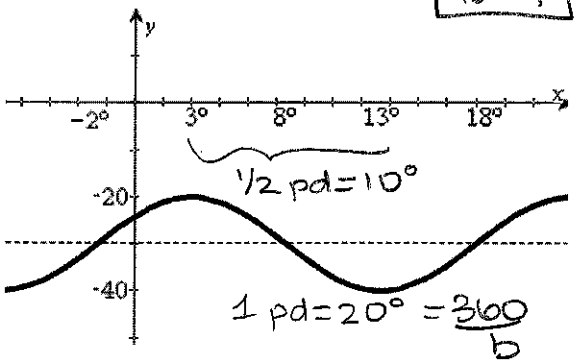


$Pd = 120° = \frac{360}{b}$

$120b = 360$

$b = 3$

12.



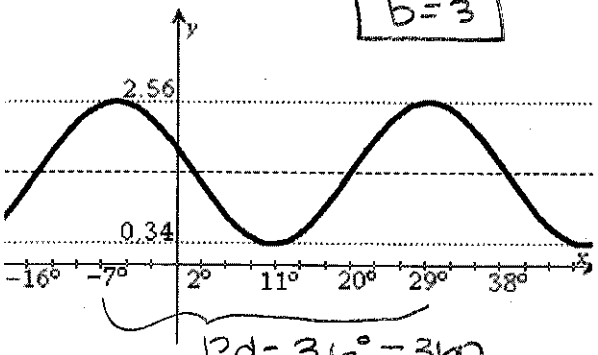
$\frac{1}{2} pd = 10°$

$1\ pd = 20° = \frac{360}{b}$

$20b = 360$

$b = 18$

13.

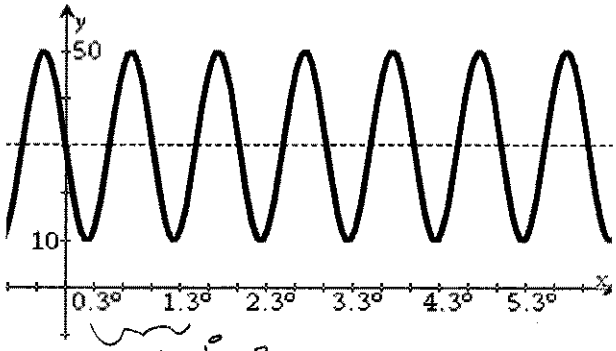


$Pd = 36° = \frac{360}{b}$

$36b = 360$

$b = 10$

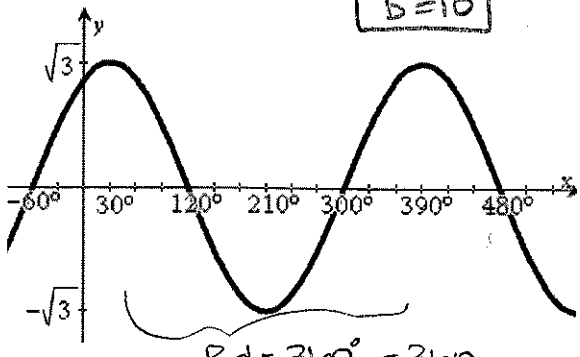
14.



$pd = 1° = \frac{360}{b}$

$b = 360$

15.

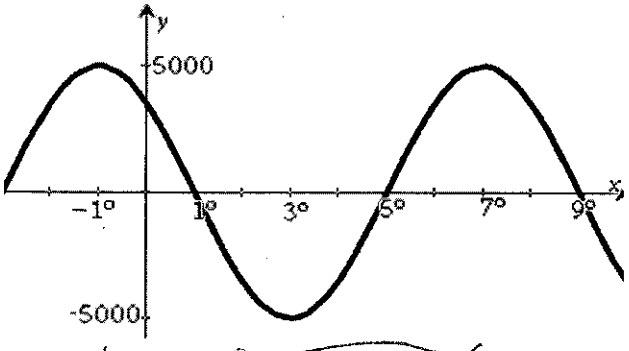


$Pd = 360° = \frac{360}{b}$

$360b = 360$

$b = 1$

16.



$Pd = 8° = \frac{360}{b}$

$8b = 360$

$b = 45$

$y = a\cos b(\theta - c°) + d$ $\quad y = a\cos b(x-c)+d$

$y = a\sin b(\theta - c°) + d$ $\quad y = a\sin b(x-c)+d$

* Remember, there are an infinite amount of answers! Ask!!

1. $y = -3\sin\frac{1}{4}(x-\pi)+5$

   $y = 3\cos\frac{1}{4}(x+\pi)+5$

2. $y = -4\sin\frac{\pi}{10}(x-7)-3$

   $y = 4\cos\frac{\pi}{10}(x-2)-3$

3. $y = 2\cos 2(x-\frac{\pi}{6})+5$

   $y = -2\cos 2(x+\frac{\pi}{3})+5$

4. $y = -.05\sin\frac{\pi}{4}(x-1)+.25$ $\quad y = .05\cos\frac{\pi}{4}(x+1)+.25$

   $y = -.05\cos\frac{\pi}{4}(x-3)+.25$

   $y = .05\sin\frac{\pi}{4}(x+3)+.25$

5. $y = 9\cos 8x + 4$ $\quad y = 9\cos 8(x-\frac{\pi}{4})+4$

   $y = 9\cos 8(x-\frac{3\pi}{4})+4$

6. $y = -2\cos 5\pi(x-.07)-8$

   $y = 2\cos 5\pi(x+.13)-8$

7. $y = -5\cos\frac{\pi}{15}(x-10)-2$

   $y = 5\cos\frac{\pi}{15}(x+5)-2$

8. $y = 7.2\cos\frac{\pi}{800}(x-100)-2.4$

$b = \pi/800$

9. $y = 6\cos 2(\theta - 20°) + 9$
$y = -6\sin 2(\theta - 65°) + 9$
$y = 6\sin 2(\theta + 25°) + 9$
$y = -6\cos 2(\theta + 70°) + 9$

10. $y = -10\cos 9(\theta - 4°) + 8$ $y = -10\sin 9(\theta + 6°) + 8$
$y = 10\sin 9(\theta - 14°) + 8$
$y = 10\cos 9(\theta + 16°) + 8$

11. $y = 5\cos 3(\theta - 10°) - 3$ $y = 5\sin 3(\theta + 20°) - 3$
$y = -5\sin 3(\theta - 40°) - 3$

12. $y = 10\cos 18(\theta - 3°) - 30$ $y = 10\sin 18(\theta + 2°) - 30$

13. $y = -1.11\sin 10(\theta - 2°) + 1.45$ $y = 1.11\cos 10(\theta + 7°) + 1.45$

14. $y = -20\cos 360(\theta - .3°) + 30$
$y = -20\sin 360\theta + 30$

15. $y = \sqrt{3}\cos(\theta - 30°)$
$y = \sqrt{3}\sin(\theta + 60°)$

16. $y = -5000\sin 45(\theta - 1°)$
$y = 5000\cos 45(\theta + 1°)$