

Section 4.4 Sine and Cosine Transformations Worksheet

Determine the amplitude, period, frequency, phase shift, and vertical translation for each. Describe the transformations required to obtain the trig function starting from the parent function.

- |  |   |
|--|---|
| 1. $y = 2 \sin 3x$                         | 2. $y = -\sin(x - \pi)$                 |
| 3. $y = 3 \cos 4x$                         | 4. $y = 3 \sin 6x - 3$                  |
| 5. $y = -\cos 2x - 5$                      | 6. $y = \cos(x - \pi)$                  |
| 7. $y = \frac{1}{4} \sin 2x$               | 8. $y = 3 \cos \frac{1}{2}x + 4$        |
| 9. $y = -3.5 \sin(2x - \frac{\pi}{2}) - 1$ | 10. $y = \sin \frac{1}{2}(x - \pi) + 2$ |

Sketch the graph of each function for one period. Use the graphs provided.

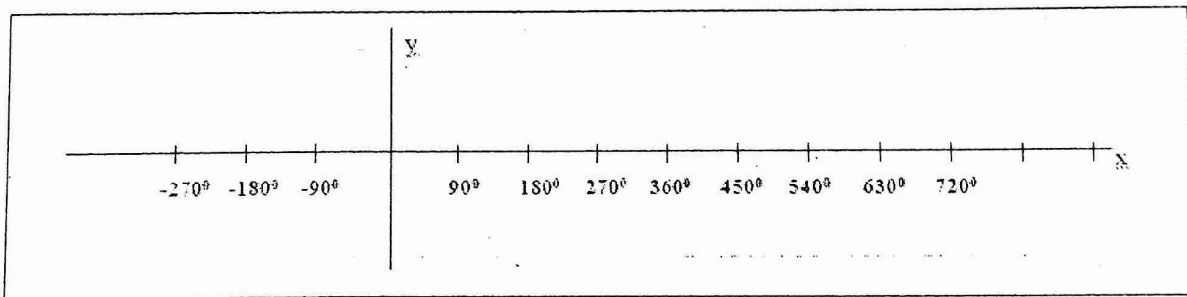
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|-------------------------------------|------------------------|
| 11. $y = \sin 2x + 3$               | 12. $y = \cos 2x - 1$  |
| 13. $y = \sin(x - \pi) - 1$         | 14. $y = 3 \sin x - 1$ |
| 15. $y = \cos 2(x - \frac{\pi}{3})$ |                        |

Find the equation given the information provided.

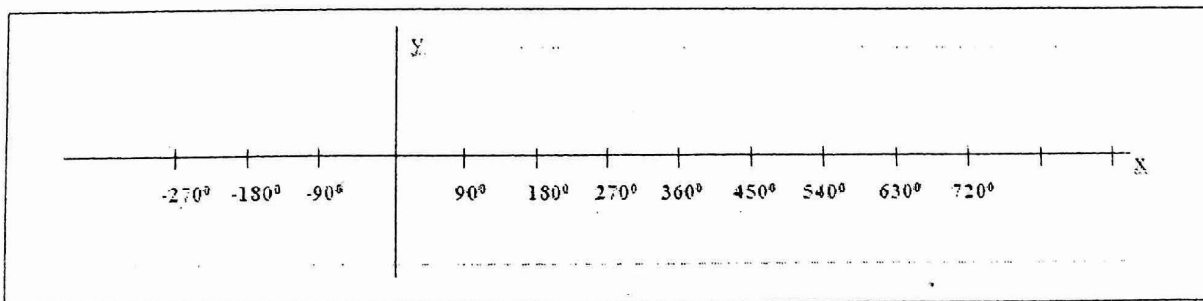
16. Find an equation for a sine function that has amplitude of 4, a period of  $180^\circ$ , and a y-intercept of  $-3$ .
17. Find an equation for a cosine function that has amplitude of  $\frac{3}{5}$ , a period of  $270^\circ$ , and a y-intercept of 5.
18. Find an equation for a sinusoid that has amplitude 1.5, period  $\pi/6$  and goes through point  $(1,0)$ .

(11-15)

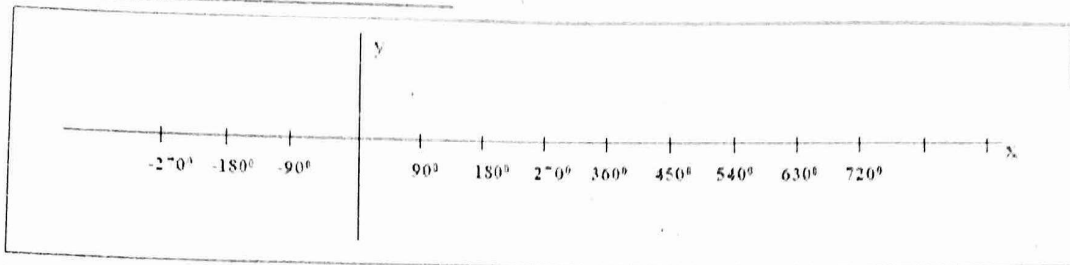
Function: \_\_\_\_\_



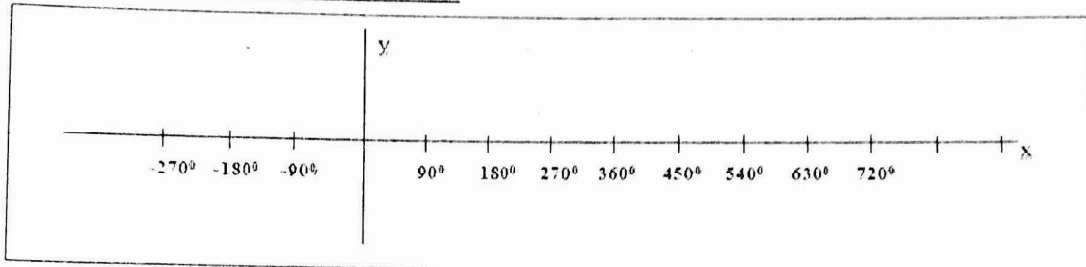
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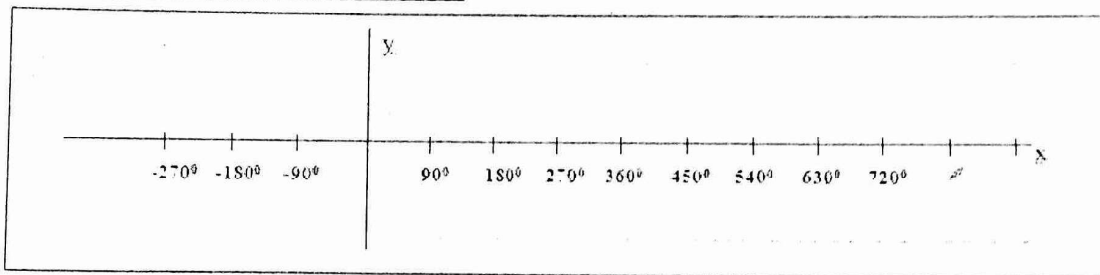
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