For problems 1–12: State the amplitude and period. Describe any transformations (vertical/horizontal/reflection). Sketch at least two full cycles of the given function.
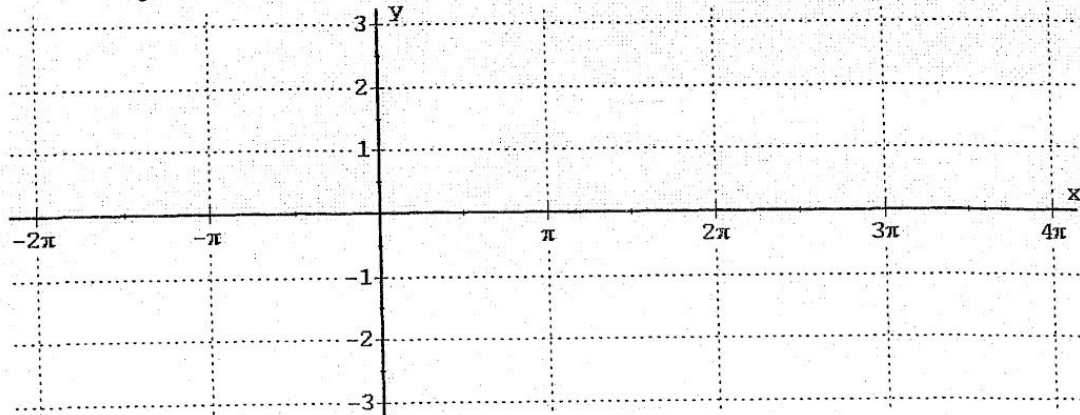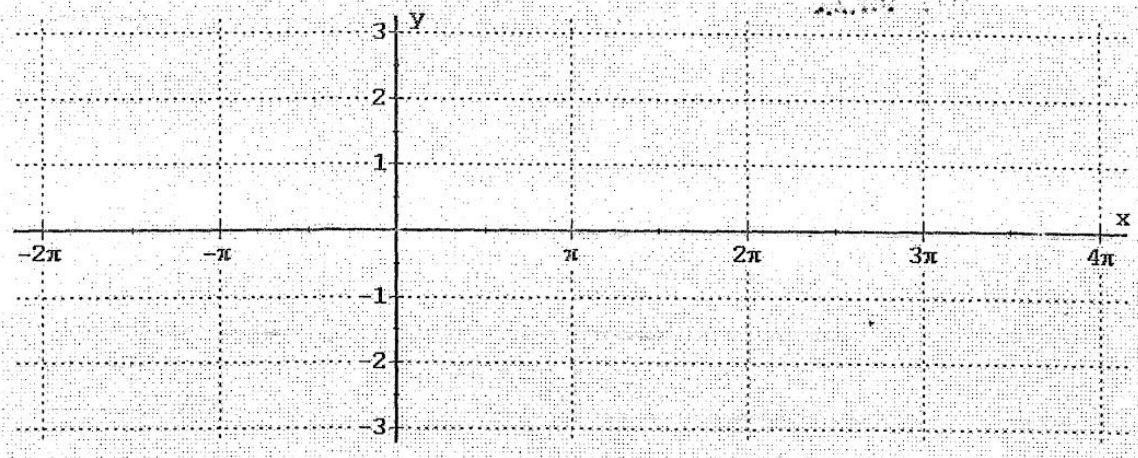
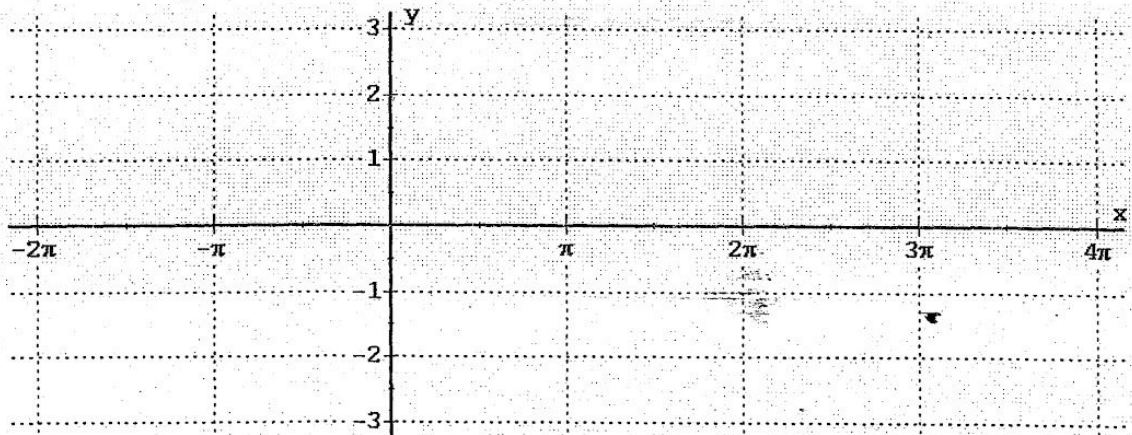(1) GRAPH $y = \sin 2x$
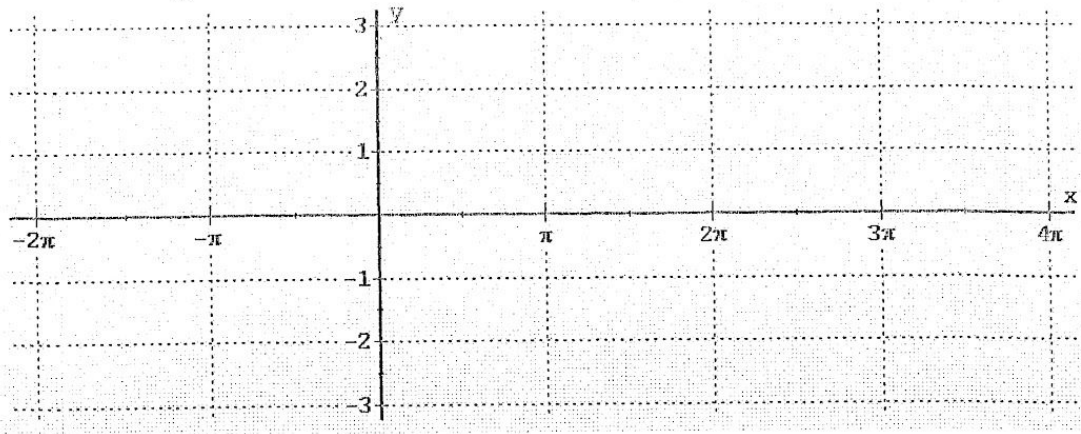
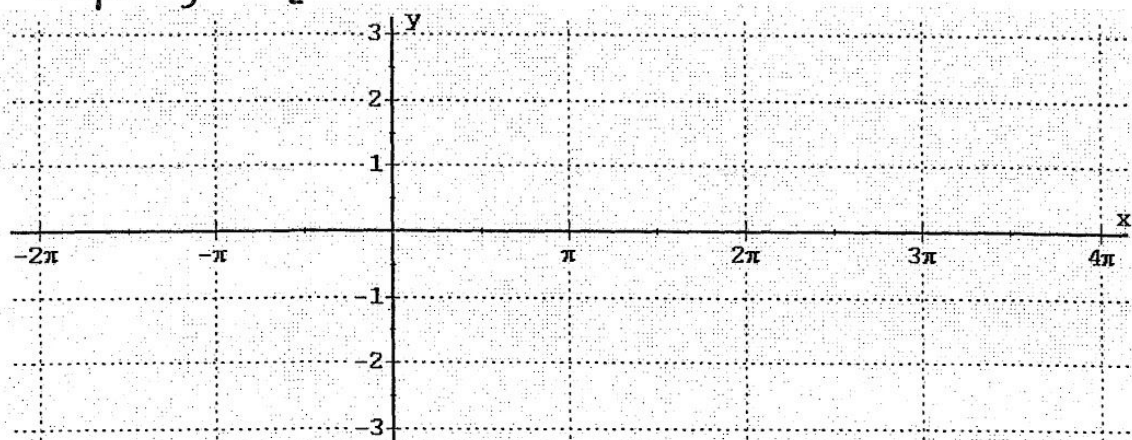(2) GRAPH $y = \sin x - 2$
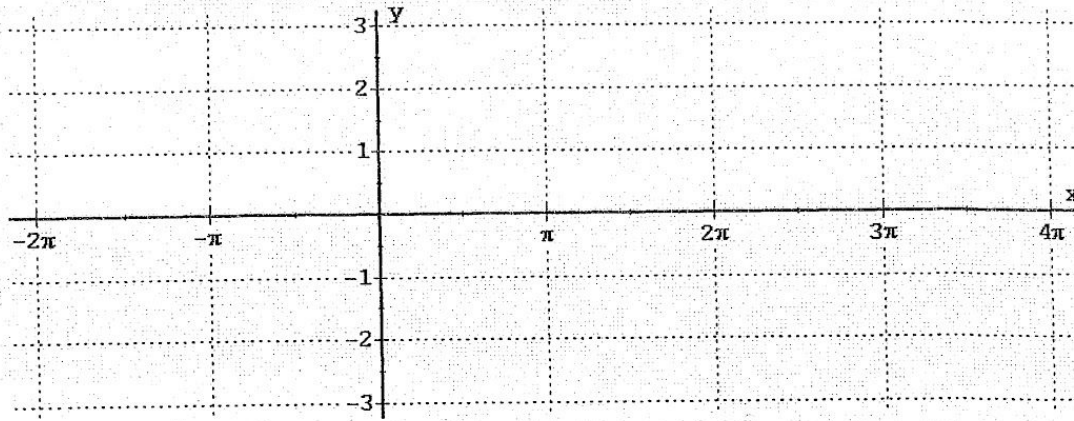
(3) GRAPH $y = \sin(x - \pi)$

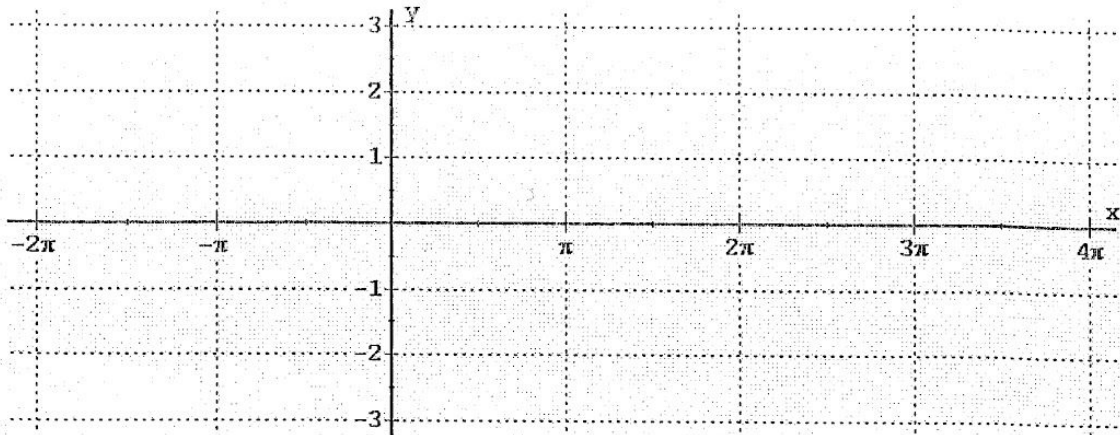(4) GRAPH $y = \sin\left(x + \frac{\pi}{2}\right) + 1$
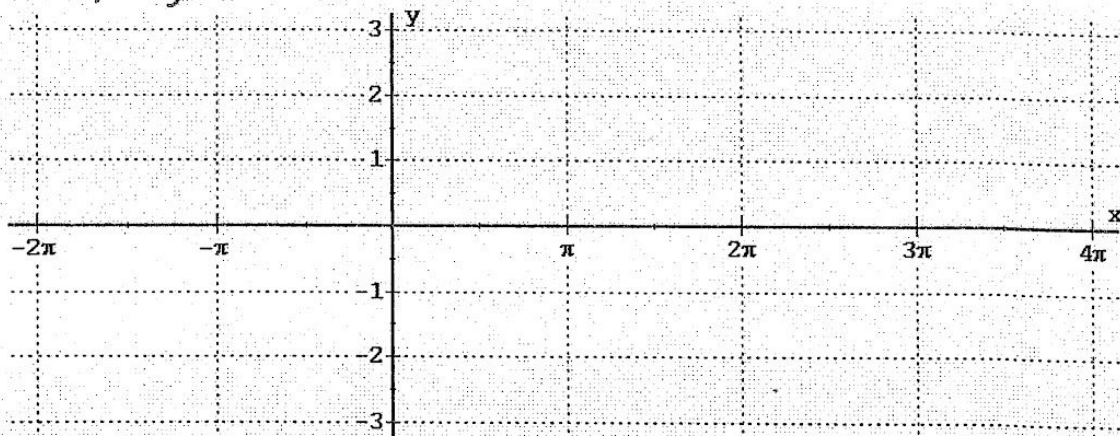

(5) GRAPH $y = 3\sin(x + \pi)$
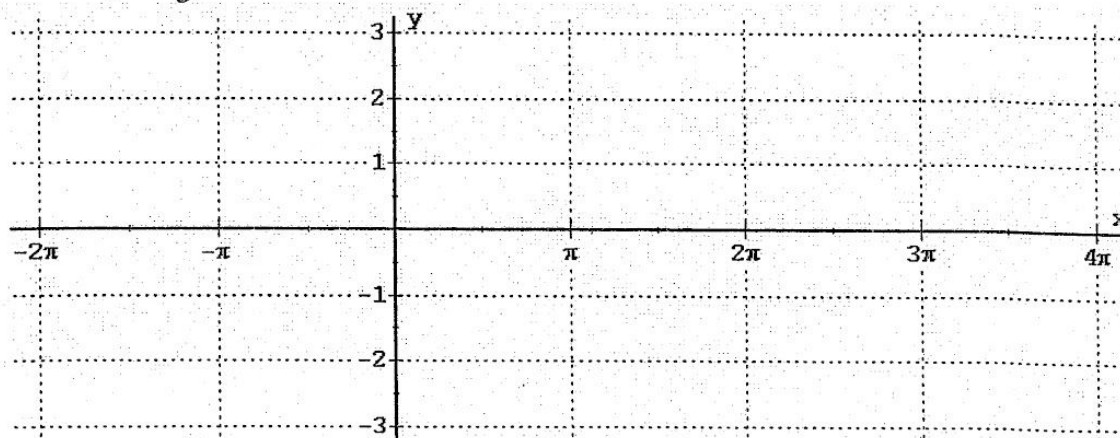

(6) GRAPH $y = \frac{1}{2}\sin 2x$

⑦ Graph $y = \cos\frac{1}{2}x$
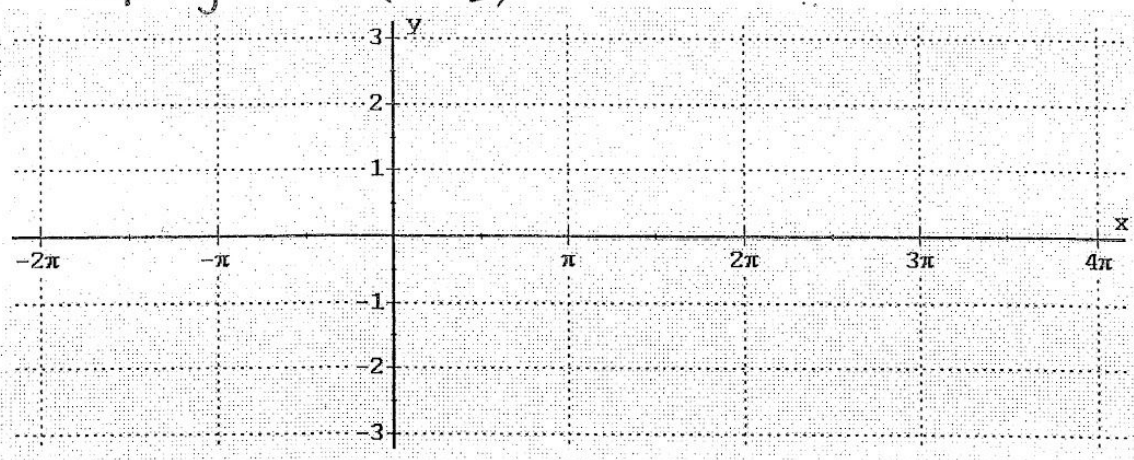
⑧ GRAPH $y = \cos x + 2$
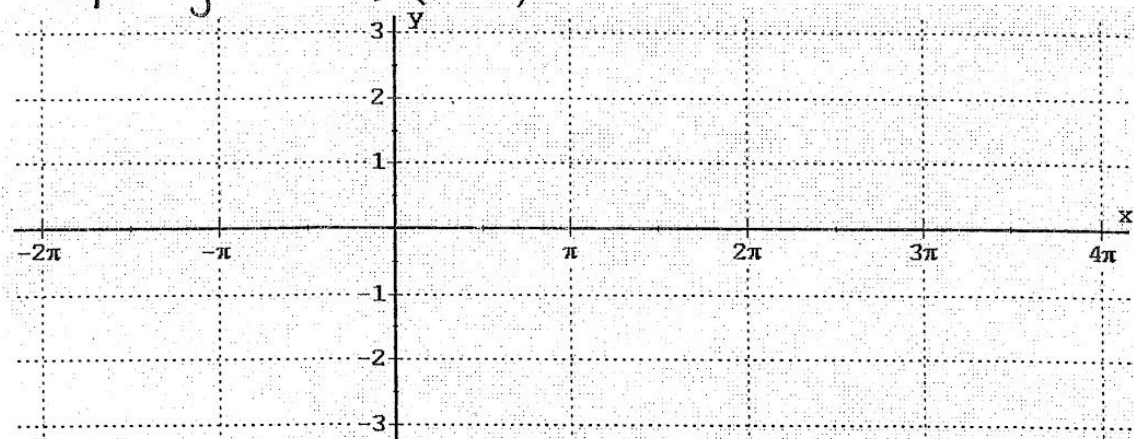
⑨ GRAPH $y = \cos(x + \pi)$

(10) GRAPH $y = \cos\left(x - \frac{\pi}{2}\right) - 1$
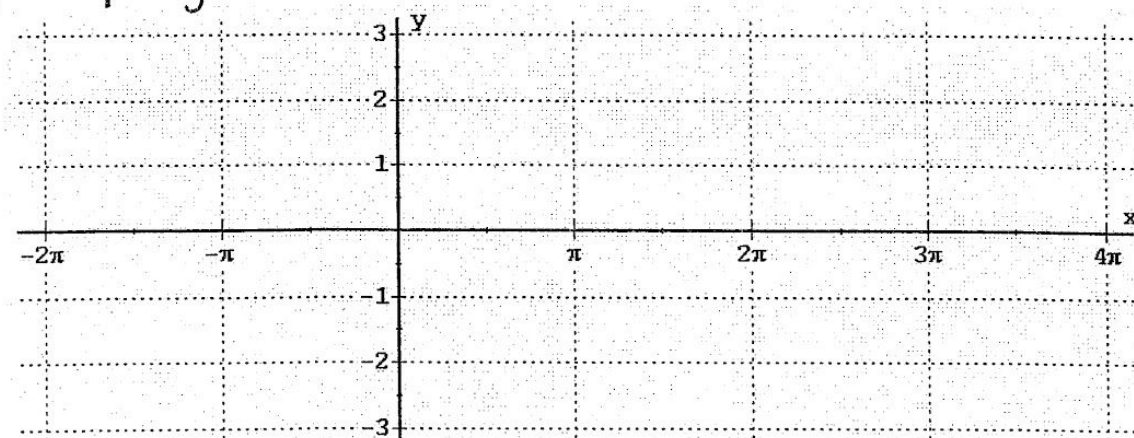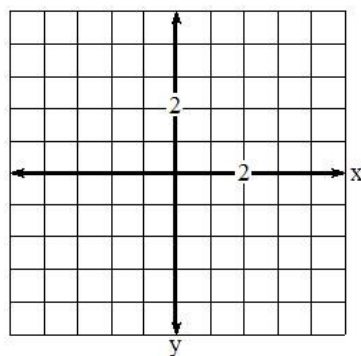

(11) GRAPH $y = 2\cos(x - \pi)$

(12) GRAPH $y = \cos(4x) + 1$

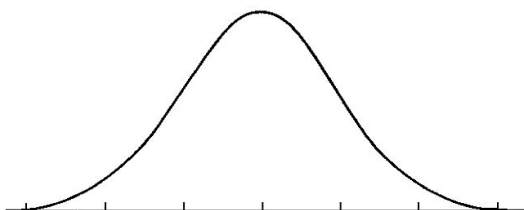| 13. Simplify: $\sqrt{54} - 2\sqrt{24}$	14. Solve for R. $\frac{1}{R} = \frac{1}{s} + \frac{1}{m}$

15. Write the equation of a cubic polynomial that has a solution at and complex solutions of –5i. Then sketch the graph of your polynomial using the coordinate plane to the right.

16. Find the mean and the standard deviation for the data listed below, and use it to fill in the values below the bell curve.
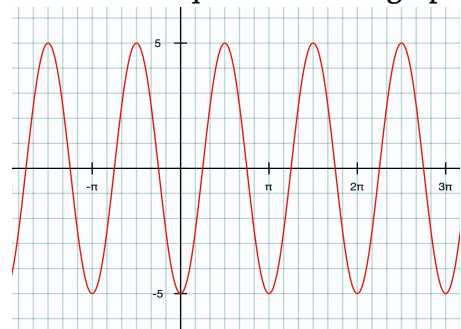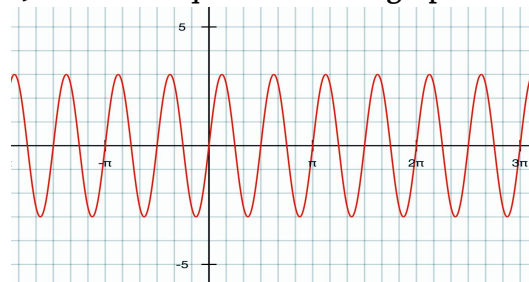
6,8 10, 6, 10, 7, 8, 9, 5

If this data was normally skewed, 84% of the

data would be above_____?

17. Given the $\tan\theta = -11/60$ and $\sin\theta > 0$, find $\sec\theta$. *(Hint: what quadrant are you in?)*

18. Write an equation for the graph below:

19. Write an equation for the graph below:

20. Given $\theta = 7\pi/4$, find the values of all 6 trig functions.

21. If a plane is supposed to descend at an angle of depression of 28 degrees, and this plane is currently 1200 meters in the air, how many more meters does it need to fly before it lands?

28°

x

1200

28°