The weights of a sample of tuna fish cans shows that the weight of a can of tuna that is 2 standard deviations below the mean is 10.8 ounces and the weight of a can of tuna that is 3 standard deviations above the mean is 14.8 ounces.

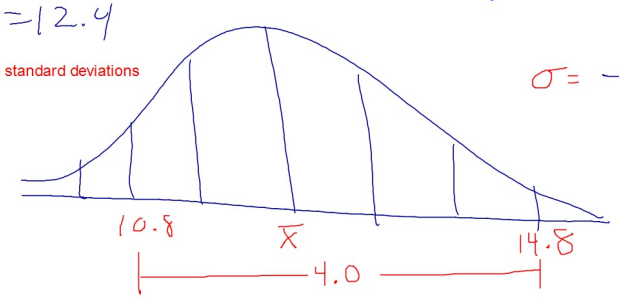
Find the mean and standard deviation of this sample.

$\sigma = .8$

$\bar{x} = 12.4$

start at 10.8 and add two standard deviations to get to the mean

$\sigma = \frac{4.0}{5} = .8$

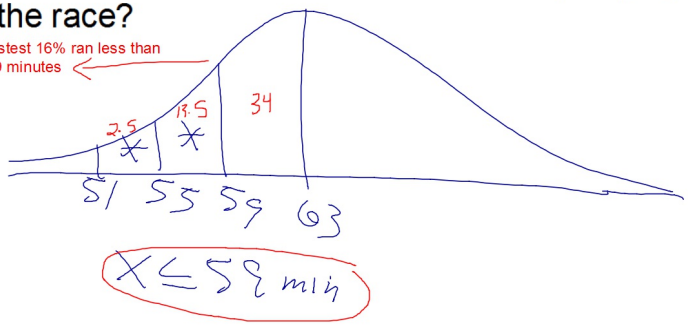


To win a prize, a tomato must be greater than 4 inches in diameter. The diameters of a crop of tomatoes grown on your farm are normally distributed with a mean of 3.2 inches and a standard deviation of 0.4 inches.

Find the probability that your crop will contain a winning tomato.

To qualify as a contestant in a race, a runner has to be in the fastest 16% of all applicants. The running times are normally distributed with a mean of 63 minutes and a standard deviation of 4 minutes. What is the qualifying time for the race?

fastest 16% ran less than 59 minutes



$x \leq 59$ min

Tubs of a certain brand of butter have weights that are normally distributed and have a mean weight of 1 lb and a standard deviation of 0.06 lbs.
At a quality control checkpoint a sample of tubs is taken and weighed. It turns out 12 of these tubs weigh less than 0.88 lbs.

How many tubs were in the sample?

2.5% weigh less than 0.88 lbs. Therefore you want to solve the following equation:

(0.025)(Total Sample Size) = 12

Total Sample Size = 480

A company makes nails and sells them in boxes of 200 nails. The lengths of the nails are normally distributed with a mean of 3 inches and a standard deviation of 0.05 in.

1. What range of lengths contain 95% of the nails?

2. What % of the nails are shorter than 2.95 in long?

3. If you were to grab a random nail what is the probability that you grab one longer than 3.1 in long?

4. If you were to grab a random nail what is the probability that you grab one between 2.9 and 3.05 inches long?

Convert to degrees

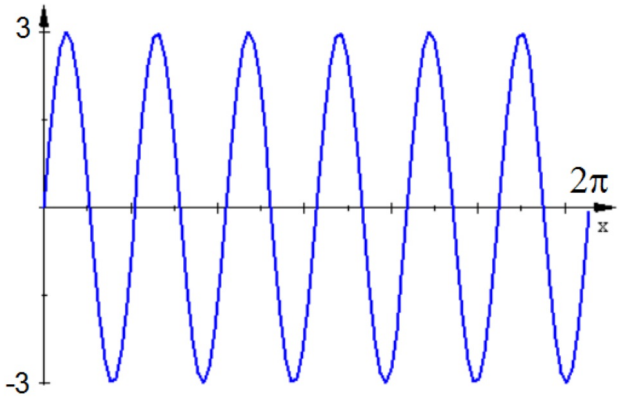
$$\frac{180^\circ}{\pi} \cdot \frac{58\pi}{72} = 145^\circ$$

The password to your email consists of six characters, four of them must be letters and two of them must be digits from 0 to 9. If letters can repeat and numbers can't find the possible number of passwords.

$26 \cdot 26 \cdot 26 \cdot 26 \cdot 10 \cdot 9$

41,127,840

Write an equation for this graph.



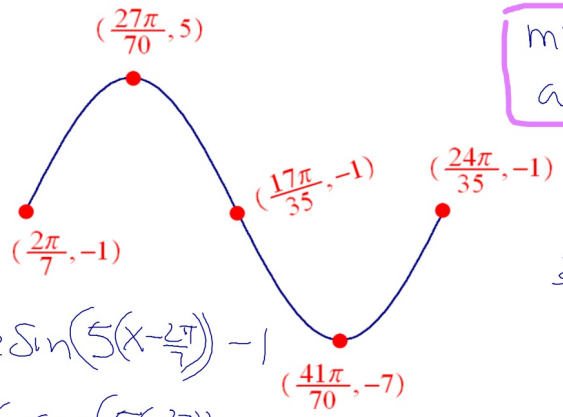
$a = 3$

$b = \frac{2\pi}{\text{period}} = \frac{2\pi}{\frac{\pi}{3}}$

$= 2\pi \cdot \frac{3}{\pi} = 6$

$y = 3\sin 6x$

Write both a Sin and a Cos equation for this graph.



midline $y = -1$

amp $= 6$

$\frac{24\pi}{35} - \frac{17\pi}{35} = \frac{7\pi}{35}$

$= \frac{\pi}{5} \times 2$

period $\frac{2\pi}{5} \rightarrow b = 5$

$y = 6\sin(5(x - \frac{2\pi}{7})) - 1$

$y = 6\cos(5(x - \frac{27\pi}{70})) - 1$