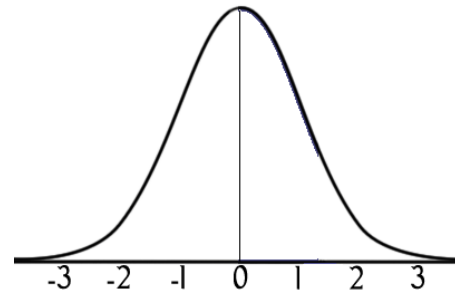


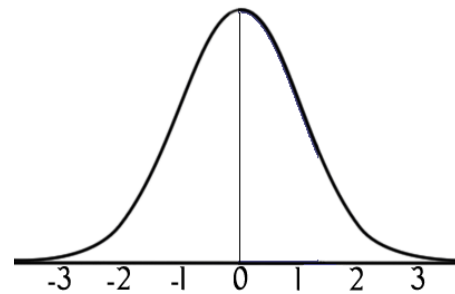
Using the normal distribution tables, find the area under the normal distribution curve for the following:

(Use the diagram to shade in the area you are looking up. This is to help.)

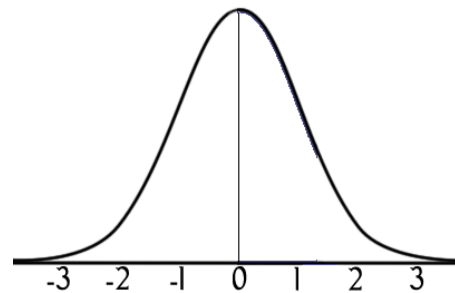
1) Between $z = 0$ and $z = 2.13$



2) Between $z = -1.85$ and $z = 0$

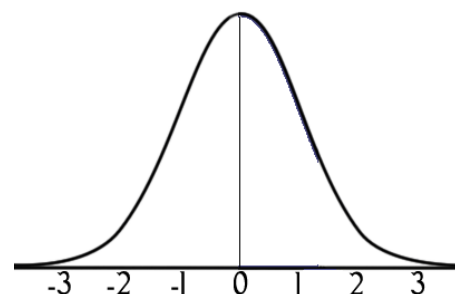


3) Between $z = -1.23$ and $z = 2.56$

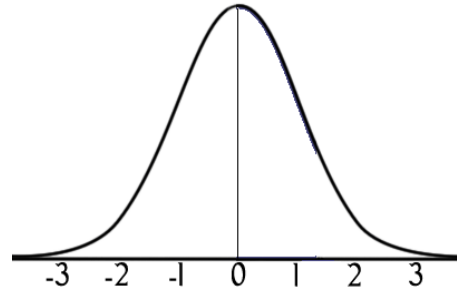


Find the probabilities for each using the normal distr.

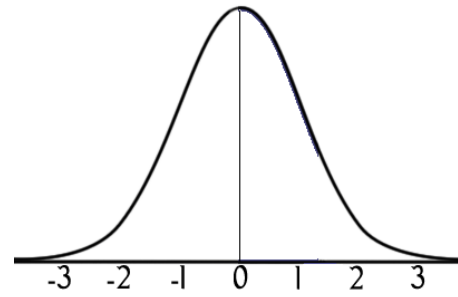
4) $P(0 < z < 1.12)$



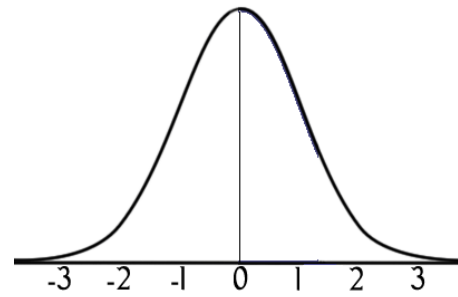
5) $P(z < 1.56)$



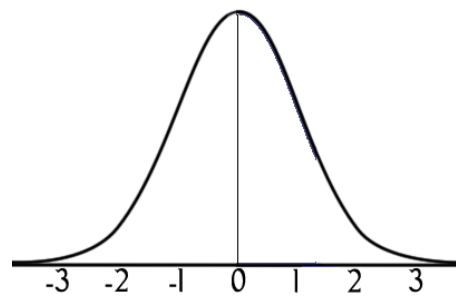
6) $P(z > 2.43)$



7) $P(z < -2.3)$



8) Find the z value to the right of the mean so that 67% of the area under the curve lies to the left of it.



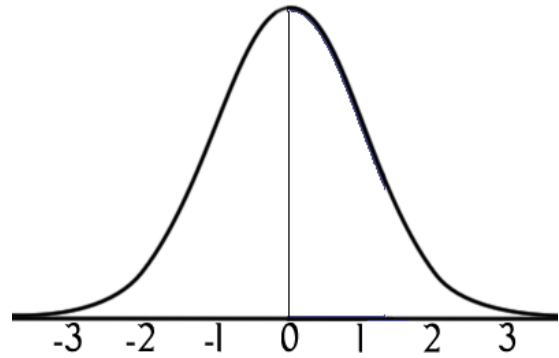
9. The average salary of all US teachers is \$47,750, and the standard deviation is \$5680. Find these probabilities that a randomly selected teacher earns:

a. between \$35,000 and \$45,000 per year

$$z_{left} = \frac{X_{low} - \mu}{\sigma} =$$

$$z_{right} = \frac{X_{high} - \mu}{\sigma} =$$

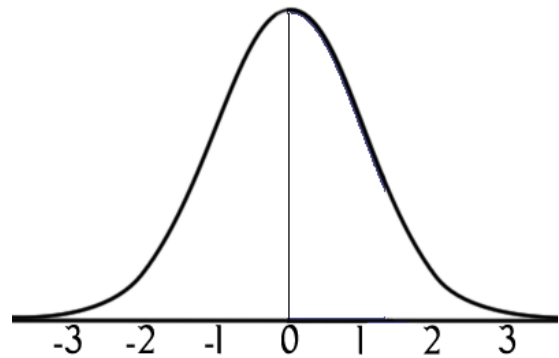
p(_____ < Z < _____)



b. more than \$40,000 per year

$$z = \frac{X - \mu}{\sigma} =$$

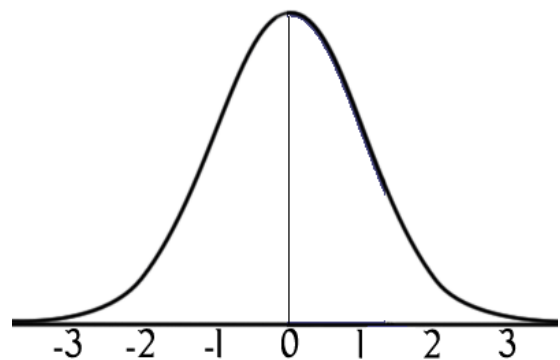
p(_____ < Z)



10. The average SAT score is 1028 with a standard deviation of 92. What is the probability that a randomly selected score exceeds 1200?

$$z = \frac{X - \mu}{\sigma} =$$

p(_____ < Z)



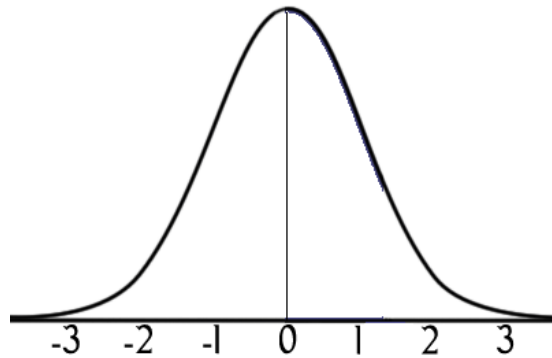
11. The average calories in a chocolate bar is 225 with a standard deviation of 10. Find the probability that a randomly selected chocolate bar will have

a. between 200 and 250 calories

$$z_{left} = \frac{X_{low} - \mu}{\sigma} =$$

$$z_{right} = \frac{X_{high} - \mu}{\sigma} =$$

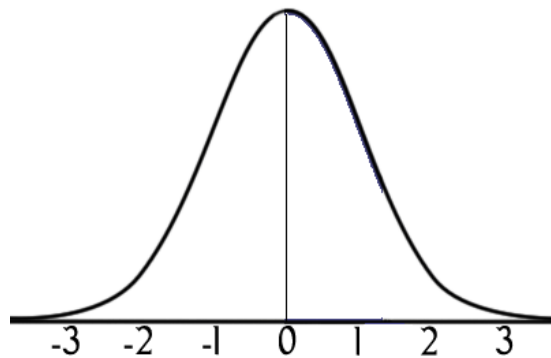
$$p(\text{_____} < Z < \text{_____})$$



b. less than 200 calories

$$z = \frac{X - \mu}{\sigma} =$$

$$p(Z < \text{_____})$$

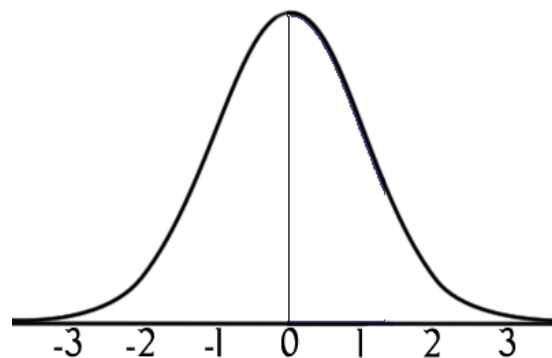


12. The average plumber makes \$85,900 with a standard deviation of \$11,000. Find the probability that a randomly selected plumber makes between \$78,000 and \$90,000 .

$$z_{left} = \frac{X_{low} - \mu}{\sigma} =$$

$$z_{right} = \frac{X_{high} - \mu}{\sigma} =$$

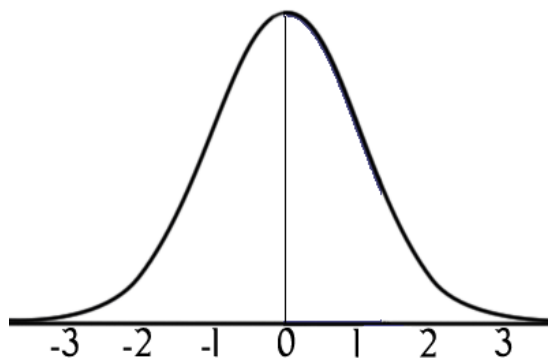
$$p(\text{_____} < Z < \text{_____})$$



13. The mean number of miles per year for a US vehicle is 12,494 miles with a standard deviation of 1290 miles. A vehicle is selected at random. Calculate these probabilities.

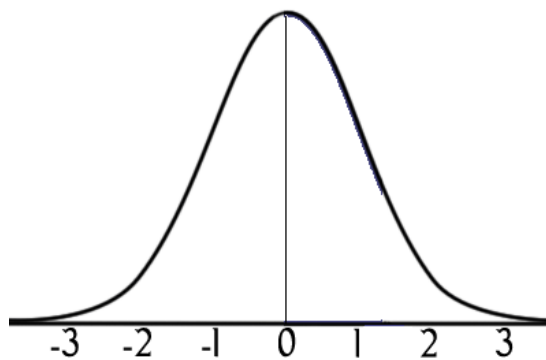
a. The car is driven less than 10,000 miles in a year.

$$z = \frac{X - \mu}{\sigma} =$$



b. The car is driven over 14,000 miles in a year.

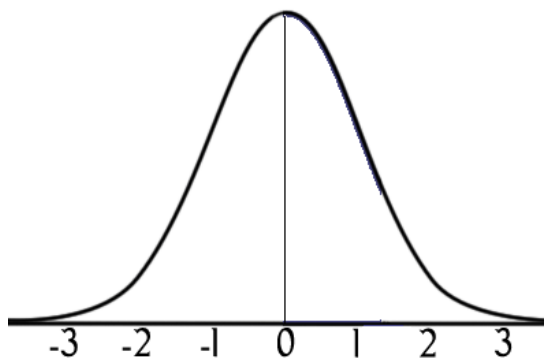
$$z = \frac{X - \mu}{\sigma} =$$



c. The car is driven between 12,000 and 13,000 miles in a year.

$$z_{left} = \frac{X_{low} - \mu}{\sigma} =$$

$$z_{right} = \frac{X_{high} - \mu}{\sigma} =$$



14. The average credit card debt for a college senior is \$4960 with a standard deviation of \$1230. What is the probability than a senior has more than \$6000 of credit card debt?

15. Th average price of gasoline in 2017 was \$2.37 per gallon with a standard deviation of 15 cents. What is the probability that the price of gas at the pump on a random day in 2017 was between \$2.30 and \$2.50 ?

16. A screening test has an average score of 64 and a standard deviation of 9. If only the top 20% of test scores receive an interview, what is the cutoff score?

$$Z = \frac{X - \mu}{\sigma} \quad \text{Find } z \text{ for } .8 \text{ in the table, then solve for } x: \quad X = \mu + Z\sigma$$