Bellwork Algebra 2 Thursday, May 22, 2014

1. A manufacturer produces ball bearings for the automotive industry. The mean diameter of a ball bearing is 3.4mm with a standard deviation of 0.04 mm.

a) What % of the ball bearings have a diameter that is between 3.32mm and 3.44mm?

81.5%

b) What % of the ball bearings have a diameter that is no more than 3.36mm?

16%

c) What interval of diameters contains 68% of the ball bearings?

3.36 to 3.44

d) What % of the ball bearings have a diameter less than 3.45mm?

$z = \frac{3.45-3.4}{.04} = 1.25$

89.44%

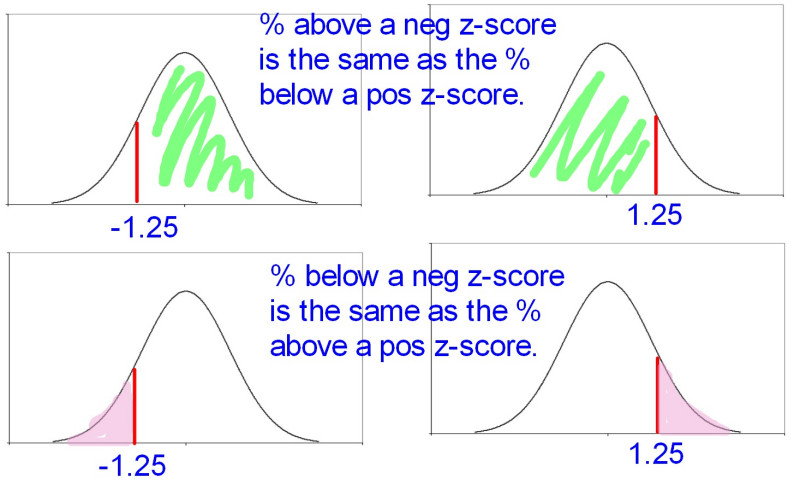
e) What % of ball bearings have a diameter of at least 3.5mm?

$\frac{3.5-3.4}{.04} = 2.5$ $100-99.38 = .62\%$

f) What % of ball bearings have a diameter more than 3.35mm?

$\frac{3.35-3.4}{.04} = -1.25$ 89.44

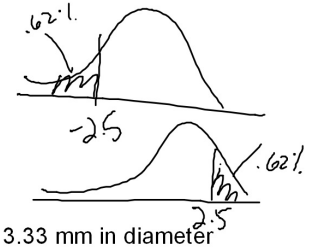
See next page regarding negative z-scores



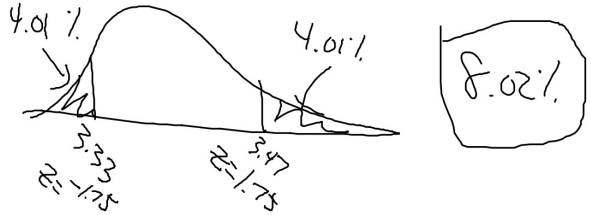
g) What % of ball bearings have a diameter less than 3.3mm

$$\frac{3.3 - 3.4}{.04} = -2.5$$

.62%



h) If the diameter is more than 3.47 mm or less than 3.33 mm in diameter it can't be used. What percent of the ball bearings can't be used?



8.02%