

MTH 154 Homework #6 Key

1. a. $18 - 2(6) = 18 - 12 = 6$ $\mu = 18, \sigma = 6$
 $18 + 2(6) = 18 + 12 = 30$

b. $18 + 2 \frac{6}{\sqrt{25}} = 18 + \frac{12}{5} = 20.4$
 $18 - 2 \frac{6}{\sqrt{25}} = 18 - \frac{12}{5} = 15.6$

2. $\mu = 266, \sigma = 16$

a. $266 - 3(16) = 218$
 $266 + 3(16) = 314$

b. $266 + 2(16) = 298$ or longer

3. $\mu = 110, \sigma = 15$

$\mu = 90, \sigma = 15$

$\frac{130 - 110}{15} = 1.33$

$\frac{110 - 90}{15} = 1.33$

They are the same

4. 1.19% (see Excel)

5. about $\frac{2}{3}$ of a st. dev. (see Excel)

6. answers will vary

2 standard deviations is unusual, but not so unusual that there aren't large #'s of people who meet the standard.

7. $4!C3 = 10,660$ (see Excel)

8. $\frac{11!}{2!3!2!2!} = 831,600$

9. $11P5 = 55,440$