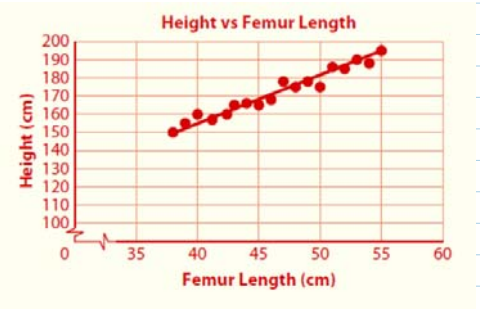
Section 7.4 HW Key Pg. 236 #1-11

Saturday, October 17, 2015
7:54 PM

Answers Will Vary Depending on Your EQUATION!! ☺

1.



2. (55, 195) and (38, 150)

$$m = \frac{150-195}{38-55} = \frac{-45}{-17} = 2.6$$

$y - 150 = 2.6(x - 38)$

$y - 150 = 2.6x - 98.8$

$\boxed{h = 2.6f + 51.2}$

3. $f = 51.6$

$h = 2.6(51.6) + 51.2$

$\boxed{h = 185.36 \text{ cm}}$

4. $178 = 2.6f + 51.2$

$\boxed{f = 48.8 \text{ cm}}$ Yes, since this is within the domain of the model the prediction should be fairly accurate.

5. $203 = 2.6f + 51.2$

$\boxed{f = 58.4 \text{ cm}}$

Possibly not, since this involves extrapolating beyond the known data, and the linear trend may not continue.

6. $160 = 2.6f + 51.2$

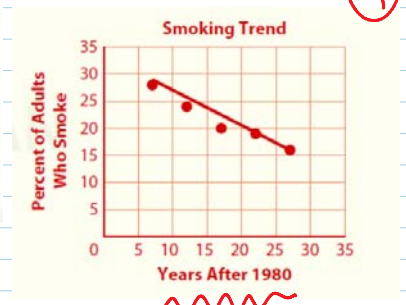
$\boxed{f = 41.8 \text{ cm}}$

No, the data were taken from a sample of men. The relationship between femur length and height may be different for women.

7. Difference in height would be 2.6 cm since the slope of 2.6 indicates that for every 1 cm. difference in femur the predicted height changes by 2.6 cm.

8.

	Year	Percent of Adults Who Smoke
7	1987	28
12	1992	24
17	1997	20
22	2002	19
27	2007	16



9. (t, P): (22, 19) and (27, 16)

$$m = \frac{19-16}{22-27} = \frac{-3}{5} = -0.6$$

$y - 19 = -0.6(x - 22)$

$y = -0.6x + 32.2$

$\boxed{P = -0.6t + 32.2}$

10. 2010 would be $t = 30$...

$P = -0.6(30) + 32.2$

$\boxed{P = 14.2\%}$

This is only 3 years beyond the data, so the prediction should

11. Let $P = 0\%$

$0 = -0.6t + 32.2$

$t = 53$ years

53 years after 1980 is 2033. This

This is only 3 years beyond the data, so the prediction should be reasonably accurate.

53 years after 1980 is 2033. This is probably not reliable, since it involves extrapolation 25 years beyond the data. And it is unlikely that the # of smokers will ever be zero.