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① 1) $M_x = 5.5$ $S_y = 13.2$ $r = 0.973$
$M_Y = 72.6$ $S_x = 3.03$

$b = r \cdot \frac{S_y}{S_x} = 0.973 \times \frac{13.2}{3.03}$

$= 4.23$

$A = M_Y - b \cdot M_x$
$= 72.6 - 4.23(5.5)$
$= 49.3$

$Y = 4.23x + 49.3$ //

2) $x = 7$
$Y = 4.23(7) + 49.3$
$= 78.91$
≈ 79

Prediction shows a ~~so~~ score of 79 while the table shows a score of 74. This is because there are also factors that cause variability such as individual learning styles, distractions, or exam difficulty.

3) $x = 11$
$Y = 4.23(11) + 49.3$
$= 95.83$
≈ 96
//

② 1) $M_x = 64$ $S_x = 3.16$ $r = 0.728$

$M_y = 154$ $S_y = 11.94$

$$b = r \cdot \frac{S_y}{S_x} = 0.728 \times \frac{11.94}{3.16}$$

$$= 2.75$$

$$A = 154 - 2.75(64)$$

$$= -22$$

$$Y = 2.75x - 22$$

2) $x = 70$

$$Y = 2.75(70) - 22$$

$$= 170.5$$

Predicted weight is 170.5 pounds.