

Question 2

b. Technical:

$$\begin{aligned}\text{Target} &= 30 + 20(4.0) + 0.07(27) + (-30)(1) + 0.01(4.0)(27) + 10(4)(1) \\ &= 30 + 80.0 + 1.89 - 30 + 1.08 + 40 \\ &= 120 + 2.97 \\ &= 122.97\end{aligned}$$

Non-Technical:

$$\begin{aligned}\text{Target} &= 30 + 20(4.0) + 0.07(27) + (-30)(0) + 0.01(4.0)(27) + 10(4)(0) \\ &= 30 + 80.0 + 1.89 - 0 + 1.08 + 0 \\ &= 110 + 2.97 \\ &= 112.97\end{aligned}$$

a. When Age = 27 and GPA = 2.0

$$\begin{aligned}\text{Technical} &= 30 + 20(2.0) + 0.07(27) + (-30)(1) + 0.01(2.0)(27) + 10(2.0)(1) \\ &= 62.43\end{aligned}$$

$$\begin{aligned}\text{Non-technical} &= 30 + 20(2.0) + 0.07(27) + (-30)(1) + 0.01(2.0)(27) + 10(2.0)(1) \\ &= 72.43\end{aligned}$$

$$\text{Age} = 27, \text{ GPA} = 2.5$$

$$\text{Technical} : 77.565$$

$$\text{Non-technical} : 82.57$$

$$\text{Age} = 27, \text{ GPA} = 3.0$$

$$\text{Technical} : 92.70$$

$$\text{Non-technical} : 92.70$$

$$\text{Age} = 27, \text{ GPA} = 3.5$$

$$\text{Technical} : 107.84$$

$$\text{Non-technical} : 102.84$$

when GPA is 3.5 and 4.0 technical positions earn more on average than non-technical positions. Therefore, answer 3 is correct.