

1. Which of the following are correct calculations for difference quotient of:

$$y(k) = 9k + 5$$

$$y(k) = 9k + 5$$

$$y(k+h) = 9(h+k) + 5$$

$$= 9h + 9k + 5$$

$$\frac{y(k+h) - y(k)}{h} = \frac{(9h + 9k + 5) - (9(k+1) + 5)}{h}$$

$$= \frac{9h}{h}$$

$$= \frac{h(9)}{h}$$

$$= 9$$

$$y(k) = 9k + 5$$

$$y(k+h) = 9(h+k) + 5$$

$$= 9h + 9k + 14$$

$$\frac{y(k+h) - y(k)}{h} = \frac{(9h + 9k + 14) - (9k + 5)}{h}$$

$$= \frac{9h}{h}$$

$$= \frac{h(9)}{h}$$

$$= 9$$

$$y(k) = 9k + 5$$

$$y(k+h) = 9(h+k) + 5$$

$$= 9h + 9k + 5$$

$$\frac{y(k+h) - y(k)}{h} = \frac{(9h + 9k + 5) - (9k + 5)}{h}$$

$$= \frac{9h}{h}$$

$$= \frac{h(9)}{h}$$

$$= 9$$

$$y(k) = 9k + 5$$

$$y(k+h) = 9(h+k) + 5$$

$$= 9h + 9k - 4$$

$$\frac{y(k+h) - y(k)}{h} = \frac{(9h + 9k + 23) - (9k + 5)}{h}$$

$$= \frac{9h}{h}$$

$$= \frac{h(9)}{h}$$

$$= 9$$

Solution