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

$$d(m) = m^2 + 7m + 3$$

$$d(m) = m^2 + 7m + 3$$

$$d(m+h) = (h+m)^2 + 7(h+m) + 3$$

$$= h^2 + 2hm + 7h + m^2 + 7m + 3$$

$$\frac{d(m+h) - d(m)}{h} = \frac{\left(h^2 + 2mh + 7h + m^2 + 7m + 3\right) - \left((m+1)^2 + 7(m+1) + 3\right)}{h}$$

$$= \frac{h^2 + 2mh + 7h}{h}$$

$$= \frac{h(h + 2m + 7)}{h}$$

$$= h + 2m + 7$$

$$d(m) = m^2 + 7m + 3$$

$$d(m+h) = (h+m)^2 + 7(h+m) + 3$$

$$= h^2 + 2hm + 9h + m^2 + 9m + 11$$

$$\frac{d(m+h) - d(m)}{h} = \frac{\left(h^2 + 2mh + 9h + m^2 + 9m + 11\right) - \left(m^2 + 7m + 3\right)}{h}$$

$$= \frac{h^2 + 2mh + 7h}{h}$$

$$= \frac{h(h + 2m + 7)}{h}$$

$$= h + 2m + 7$$

$$d(m) = m^2 + 7m + 3$$

$$d(m+h) = (h+m)^2 + 7(h+m) + 3$$

$$= h^2 + 2hm + 7h + m^2 + 7m + 3$$

$$\frac{d(m+h) - d(m)}{h} = \frac{\left(h^2 + 2mh + 7h + m^2 + 7m + 3\right) - \left(m^2 + 7m + 3\right)}{h}$$

$$= \frac{h^2 + 2mh + 7h}{h}$$

$$= \frac{h(h + 2m + 7)}{h}$$

$$= h + 2m + 7$$

$$d(m) = m^2 + 7m + 3$$

$$d(m+h) = (h+m)^2 + 7(h+m) + 3$$

$$= h^2 + 2hm + 5h + m^2 + 5m - 3$$

$$\frac{d(m+h) - d(m)}{h} = \frac{\left(h^2 + 2mh + 11h + m^2 + 11m + 21\right) - \left(m^2 + 7m + 3\right)}{h}$$

$$= \frac{h^2 + 2mh + 7h}{h}$$

$$= \frac{h(h + 2(m+1) + 7)}{h}$$

$$= h + 2m + 7$$

Solution