

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

$$x(w) = 9w^2 + 8w + 9$$

$$x(w) = 9w^2 + 8w + 9$$

$$x(w+h) = 9(h+w)^2 + 8(h+w) + 9$$

$$= 9h^2 + 18hw + 8h + 9w^2 + 8w + 9$$

$$\frac{x(w+h) - x(w)}{h} = \frac{(9h^2 + 18hw + 8h + 9w^2 + 8w + 9) - (9(w+1)^2 + 8(w+1) + 9)}{h}$$

$$= \frac{9h^2 + 18hw + 8h}{h}$$

$$= \frac{h(9h + 18w + 8)}{h}$$

$$= 9h + 18w + 8$$

$$x(w) = 9w^2 + 8w + 9$$

$$x(w+h) = 9(h+w)^2 + 8(h+w) + 9$$

$$= 9h^2 + 18hw + 26h + 9w^2 + 26w + 26$$

$$\frac{x(w+h) - x(w)}{h} = \frac{(9h^2 + 18hw + 26h + 9w^2 + 26w + 26) - (9w^2 + 8w + 9)}{h}$$

$$= \frac{9h^2 + 18hw + 8h}{h}$$

$$= \frac{h(9h + 18w + 8)}{h}$$

$$= 9h + 18w + 8$$

$$x(w) = 9w^2 + 8w + 9$$

$$x(w+h) = 9(h+w)^2 + 8(h+w) + 9$$

$$= 9h^2 + 18hw + 8h + 9w^2 + 8w + 9$$

$$\frac{x(w+h) - x(w)}{h} = \frac{(9h^2 + 18hw + 8h + 9w^2 + 8w + 9) - (9w^2 + 8w + 9)}{h}$$

$$= \frac{9h^2 + 18hw + 8h}{h}$$

$$= \frac{h(9h + 18w + 8)}{h}$$

$$= 9h + 18w + 8$$

$$x(w) = 9w^2 + 8w + 9$$

$$x(w+h) = 9(h+w)^2 + 8(h+w) + 9$$

$$= 9h^2 + 18hw - 10h + 9w^2 - 10w + 10$$

$$\frac{x(w+h) - x(w)}{h} = \frac{(9h^2 + 18hw + 44h + 9w^2 + 44w + 61) - (9w^2 + 8w + 9)}{h}$$

$$= \frac{9h^2 + 18hw + 8h}{h}$$

$$= \frac{h(9h + 18(w+1) + 8)}{h}$$

$$= 9h + 18w + 8$$

Solution