

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

$$x(w) = 2w^2 + 3w + 4$$

$$x(w) = 2w^2 + 3w + 4$$

$$x(w+h) = 2(h+w)^2 + 3(h+w) + 4$$

$$= 2h^2 + 4hw + 3h + 2w^2 + 3w + 4$$

$$\frac{x(w+h) - x(w)}{h} = \frac{(2h^2 + 4hw + 3h + 2w^2 + 3w + 4) - (2(w+1)^2 + 3(w+1) + 4)}{h}$$

$$= \frac{2h^2 + 4hw + 3h}{h}$$

$$= \frac{h(2h + 4w + 3)}{h}$$

$$= 2h + 4w + 3$$

$$x(w) = 2w^2 + 3w + 4$$

$$x(w+h) = 2(h+w)^2 + 3(h+w) + 4$$

$$= 2h^2 + 4hw + 7h + 2w^2 + 7w + 9$$

$$\frac{x(w+h) - x(w)}{h} = \frac{(2h^2 + 4hw + 7h + 2w^2 + 7w + 9) - (2w^2 + 3w + 4)}{h}$$

$$= \frac{2h^2 + 4hw + 3h}{h}$$

$$= \frac{h(2h + 4w + 3)}{h}$$

$$= 2h + 4w + 3$$

$$x(w) = 2w^2 + 3w + 4$$

$$x(w+h) = 2(h+w)^2 + 3(h+w) + 4$$

$$= 2h^2 + 4hw + 3h + 2w^2 + 3w + 4$$

$$\frac{x(w+h) - x(w)}{h} = \frac{(2h^2 + 4hw + 3h + 2w^2 + 3w + 4) - (2w^2 + 3w + 4)}{h}$$

$$= \frac{2h^2 + 4hw + 3h}{h}$$

$$= \frac{h(2h + 4w + 3)}{h}$$

$$= 2h + 4w + 3$$

$$x(w) = 2w^2 + 3w + 4$$

$$x(w+h) = 2(h+w)^2 + 3(h+w) + 4$$

$$= 2h^2 + 4hw - h + 2w^2 - w + 3$$

$$\frac{x(w+h) - x(w)}{h} = \frac{(2h^2 + 4hw + 11h + 2w^2 + 11w + 18) - (2w^2 + 3w + 4)}{h}$$

$$= \frac{2h^2 + 4hw + 3h}{h}$$

$$= \frac{h(2h + 4(w+1) + 3)}{h}$$

$$= 2h + 4w + 3$$

Solution