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

$$b(g) = 3g^2 + 9g + 1$$

$$b(g) = 3g^2 + 9g + 1$$

$$b(g+h) = 3(g+h)^2 + 9(g+h) + 1$$

$$= 3g^2 + 6gh + 9g + 3h^2 + 9h + 1$$

$$\frac{b(g+h) - b(g)}{h} = \frac{\left(3g^2+6hg+9g+3h^2+9h+1\right) - \left(3(g+1)^2+9(g+1)+1\right)}{h}$$

$$= \frac{3h^2+6gh+9h}{h}$$

$$= \frac{h(6g+3h+9)}{h}$$

$$= 6g + 3h + 9$$

$$b(g) = 3g^2 + 9g + 1$$

$$b(g+h) = 3(g+h)^2 + 9(g+h) + 1$$

$$= 3g^2 + 6gh + 15g + 3h^2 + 15h + 13$$

$$\frac{b(g+h) - b(g)}{h} = \frac{\left(3g^2+6hg+15g+3h^2+15h+13\right) - \left(3g^2+9g+1\right)}{h}$$

$$= \frac{3h^2+6gh+9h}{h}$$

$$= \frac{h(6g+3h+9)}{h}$$

$$= 6g + 3h + 9$$

$$b(g) = 3g^2 + 9g + 1$$

$$b(g+h) = 3(g+h)^2 + 9(g+h) + 1$$

$$= 3g^2 + 6gh + 9g + 3h^2 + 9h + 1$$

$$\frac{b(g+h) - b(g)}{h} = \frac{\left(3g^2+6hg+9g+3h^2+9h+1\right) - \left(3g^2+9g+1\right)}{h}$$

$$= \frac{3h^2+6gh+9h}{h}$$

$$= \frac{h(6g+3h+9)}{h}$$

$$= 6g + 3h + 9$$

$$b(g) = 3g^2 + 9g + 1$$

$$b(g+h) = 3(g+h)^2 + 9(g+h) + 1$$

$$= 3g^2 + 6gh + 3g + 3h^2 + 3h - 5$$

$$\frac{b(g+h) - b(g)}{h} = \frac{\left(3g^2+6hg+21g+3h^2+21h+31\right) - \left(3g^2+9g+1\right)}{h}$$

$$= \frac{3h^2+6gh+9h}{h}$$

$$= \frac{h(6(g+1)+3h+9)}{h}$$

$$= 6g + 3h + 9$$

Solution