5. Which of the following are correct calculations for difference quotient of:
$$t(r) = 3r^2 + 9r + 3$$

$$t(r) = 3r^2 + 9r + 3$$
$$t(r+h) = 3(h+r)^2 + 9(h+r) + 3$$
$$= 3h^2 + 6hr + 9h + 3r^2 + 9r + 3$$
$$\frac{t(r+h) - t(r)}{h} = \frac{\left(3h^2 + 6rh + 9h + 3r^2 + 9r + 3\right) - \left(3(r+1)^2 + 9(r+1) + 3\right)}{h}$$
$$= \frac{3h^2 + 6rh + 9h}{h}$$
$$= \frac{h(3h + 6r + 9)}{h}$$
$$= 3h + 6r + 9$$

$$t(r) = 3r^2 + 9r + 3$$
$$t(r+h) = 3(h+r)^2 + 9(h+r) + 3$$
$$= 3h^2 + 6hr + 15h + 3r^2 + 15r + 15$$
$$\frac{t(r+h) - t(r)}{h} = \frac{\left(3h^2 + 6rh + 15h + 3r^2 + 15r + 15\right) - \left(3r^2 + 9r + 3\right)}{h}$$
$$= \frac{3h^2 + 6rh + 9h}{h}$$
$$= \frac{h(3h + 6r + 9)}{h}$$
$$= 3h + 6r + 9$$

$$t(r) = 3r^2 + 9r + 3$$
$$t(r+h) = 3(h+r)^2 + 9(h+r) + 3$$
$$= 3h^2 + 6hr + 9h + 3r^2 + 9r + 3$$
$$\frac{t(r+h) - t(r)}{h} = \frac{\left(3h^2 + 6rh + 9h + 3r^2 + 9r + 3\right) - \left(3r^2 + 9r + 3\right)}{h}$$
$$= \frac{3h^2 + 6rh + 9h}{h}$$
$$= \frac{h(3h + 6r + 9)}{h}$$
$$= 3h + 6r + 9$$

$$t(r) = 3r^2 + 9r + 3$$
$$t(r+h) = 3(h+r)^2 + 9(h+r) + 3$$
$$= 3h^2 + 6hr + 3h + 3r^2 + 3r - 3$$
$$\frac{t(r+h) - t(r)}{h} = \frac{\left(3h^2 + 6rh + 21h + 3r^2 + 21r + 33\right) - \left(3r^2 + 9r + 3\right)}{h}$$
$$= \frac{3h^2 + 6rh + 9h}{h}$$
$$= \frac{h(3h + 6(r+1) + 9)}{h}$$
$$= 3h + 6r + 9$$

Solution