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

$g(f) = 5f^2 + 6f + 8$

$g(f) = 5f^2 + 6f + 8$

$g(f+h) = 5(f+h)^2 + 6(f+h) + 8$

$= 5f^2 + 10fh + 6f + 5h^2 + 6h + 8$

$$\frac{g(f+h)-g(f)}{h} = \frac{\left(5f^2+10hf+6f+5h^2+6h+8\right)-\left(5(f+1)^2+6(f+1)+8\right)}{h}$$

$$= \frac{5h^2+10fh+6h}{h}$$

$$= \frac{h(10f+5h+6)}{h}$$

$= 10f + 5h + 6$

$g(f) = 5f^2 + 6f + 8$

$g(f+h) = 5(f+h)^2 + 6(f+h) + 8$

$= 5f^2 + 10fh + 16f + 5h^2 + 16h + 19$

$$\frac{g(f+h)-g(f)}{h} = \frac{\left(5f^2+10hf+16f+5h^2+16h+19\right)-\left(5f^2+6f+8\right)}{h}$$

$$= \frac{5h^2+10fh+6h}{h}$$

$$= \frac{h(10f+5h+6)}{h}$$

$= 10f + 5h + 6$

$g(f) = 5f^2 + 6f + 8$

$g(f+h) = 5(f+h)^2 + 6(f+h) + 8$

$= 5f^2 + 10fh + 6f + 5h^2 + 6h + 8$

$$\frac{g(f+h)-g(f)}{h} = \frac{\left(5f^2+10hf+6f+5h^2+6h+8\right)-\left(5f^2+6f+8\right)}{h}$$

$$= \frac{5h^2+10fh+6h}{h}$$

$$= \frac{h(10f+5h+6)}{h}$$

$= 10f + 5h + 6$

$g(f) = 5f^2 + 6f + 8$

$g(f+h) = 5(f+h)^2 + 6(f+h) + 8$

$= 5f^2 + 10fh - 4f + 5h^2 - 4h + 7$

$$\frac{g(f+h)-g(f)}{h} = \frac{\left(5f^2+10hf+26f+5h^2+26h+40\right)-\left(5f^2+6f+8\right)}{h}$$

$$= \frac{5h^2+10fh+6h}{h}$$

$$= \frac{h(10(f+1)+5h+6)}{h}$$

$= 10f + 5h + 6$

Solution