

Question #74729, Math / Calculus

$$f(x) = 3 - 5x - 2x^2$$

i) $f(4)$

ii) $f(0)$

iii) $f(-3)$

iv) $f(6 - t)$

v) $f(7 - 4x)$

vi) $f(x + h)$

Solution

$$i) f(4) = 3 - 5 \cdot 4 - 2(4)^2 = 3 - 20 - 32 = -49$$

$$ii) f(0) = 3 - 5 \cdot 0 - 2(0)^2 = 3$$

$$iii) f(-3) = 3 - 5 \cdot (-3) - 2(-3)^2 = 3 + 15 - 18 = 0$$

$$iv) f(6 - t) = 3 - 5 \cdot (6 - t) - 2(6 - t)^2 = 3 - 30 + 5t - 72 + 24t - 2t^2 \\ = -2t^2 + 29t - 99$$

$$v) f(7 - 4x) = 3 - 5 \cdot (7 - 4x) - 2(7 - 4x)^2 = 3 + 35 + 20x - 98 + 112x - 32x^2 \\ = 3 - (7 - 4x)(5 + 14 - 8x) = -32x^2 + 132x - 50$$

$$vi) f(x + h) = 3 - 5 \cdot (x + h) - 2(x + h)^2 = 3 - 5x - 5h - 2x^2 - 4xh - 2h^2 \\ = 3 - (x + h)(5 + 2x + 2h)$$

Answer:

$$i) f(4) = -49$$

$$ii) f(0) = 3$$

$$iii) f(-3) = 0$$

$$iv) f(6 - t) = -2t^2 + 29t - 99$$

$$v) f(7 - 4x) = -32x^2 + 132x - 50$$

$$vi) f(x + h) = 3 - (x + h)(5 + 2x + 2h)$$

Answer provided by <https://www.AssignmentExpert.com>