2.1-2.3 Review Supplement

Write the equation of the line in point-slope form. Then re-write that equation in slope-intercept form and standard form.

$(1, -3)$ and $(5, 2)$

$\text{slope} = \frac{-3-2}{1-5} = \frac{-5}{-4} = \frac{5}{4}$

$y = y_1 + m(x - x_1)$

$y = 2 + \frac{5}{4}(x-5)$

$y = \frac{2}{1} + \frac{5}{4}x - \frac{25}{4}$

$y = \frac{8}{4} + \frac{5}{4}x - \frac{25}{4}$

$y = \frac{5}{4}x - \frac{17}{4}$

$(4)\, y = \frac{5}{4}x - \frac{17}{4}\,(4)$

$4y = 5x - 17$

$-5x \quad -5x$

$-5x + 4y = -17$

Find the average rate of change on the given interval

$\frac{\Delta y}{\Delta x}$

$$f(x) = 4x^2 - 3 \quad [-2, 3]$$

$f(-2) = 4(-2)^2 - 3$

$f(-2) = 4(4) - 3$

$= 13$

$f(3) = 4(3)^2 - 3$

$= 4(9) - 3$

$(-2, 13)\ (3, 33)$

$A.R.O.C = \frac{33-13}{3-(-2)} = \frac{20}{5} = 4$

Find the average rate of change on the given interval

$$f(x) = 5x^2 + 2 \quad [2, b]$$

$5(b+2)$

$f(2) = 5(2)^2 + 2$
$= 5(4) + 2$
$= 22$

$(2, 22)$ $(b, 5b^2+2)$

$$A.R.O.C = \frac{5b^2+2-22}{b-2}$$

$$= \frac{5b^2-20}{b-2}$$

$$\frac{5(b^2-4)}{b-2}$$

$$\frac{5(b+2)(b-2)}{b-2}$$

Explain why the function is a power function.
Then give the constant of variation and the power.
Also, rewrite the function with a positive exponent and then in root form.

$$f(x) = 3x^{-9/4}$$

pwr fct because the constant of variation (3) and the pwr $\left(-\frac{9}{4}\right)$ are not 0

$$f(x) = \frac{3}{x^{9/4}} = \frac{3}{\sqrt[4]{x^9}}$$

Explain why the function is not a monomial function.
Then, rewrite the function with a positive exponent

$$f(x)=2\sqrt[8]{x^5} = 2x^{5/8}$$

Not a monomial b/c the pwr is a fraction.

-To be a monial the pwr must be a pos intger