

Exercise 30

For the following exercises, evaluate f at the indicated values $f(-3)$, $f(2)$, $f(-a)$, $-f(a)$, $f(a+h)$.

$$f(x) = \frac{6x - 1}{5x + 2}$$

Solution

Evaluate the function at each of the given numbers.

$$f(-3) = \frac{6(-3) - 1}{5(-3) + 2} = \frac{-18 - 1}{-15 + 2} = \frac{-19}{-13} = \frac{19}{13}$$

$$f(2) = \frac{6(2) - 1}{5(2) + 2} = \frac{12 - 1}{10 + 2} = \frac{11}{12}$$

$$f(-a) = \frac{6(-a) - 1}{5(-a) + 2} = \frac{-6a - 1}{-5a + 2} = \frac{6a + 1}{5a - 2}$$

$$-f(a) = -\frac{6(a) - 1}{5(a) + 2} = -\frac{6a - 1}{5a + 2} = \frac{1 - 6a}{5a + 2}$$

$$f(a+h) = \frac{6(a+h) - 1}{5(a+h) + 2} = \frac{6a + 6h - 1}{5a + 5h + 2}$$