

1. Is each of the following statements true or false?

(a) $\frac{ab+c}{a} = b+c$

(d) $\frac{a+c}{b+d} = \frac{a}{b} + \frac{c}{d}$

(f) $\frac{a}{b+c} = \frac{a}{b} + \frac{a}{c}$

(b) $\sqrt{a^2+b^2} = a+b$

(e) $\frac{a+c}{b} = \frac{a}{b} + \frac{c}{b}$

(g) $\frac{a-b}{b-a} = -1$

(c) $\sqrt{a^2} = a$

2. Evaluate each of the following.

(a) $(-3)^2$

(b) -3^2

(c) $\sqrt[3]{-27}$

(d) $\frac{\sqrt{50}}{\sqrt{2}}$

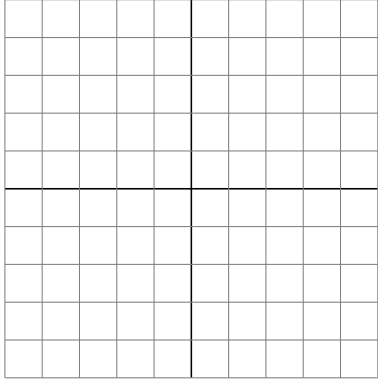
3. Find an equation of the line described.

(a) the line which passes through the points $(4, -3)$ and $(2, 1)$

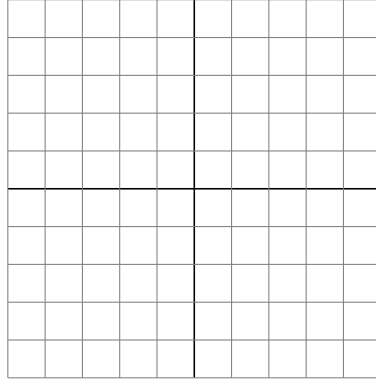
(b) the line with the same x -intercept as $x-2y=4$ and which is parallel to the line that passes through the points $(4, -2)$ and $(-3, 1)$

4. Sketch each of the following lines on the grids provided.

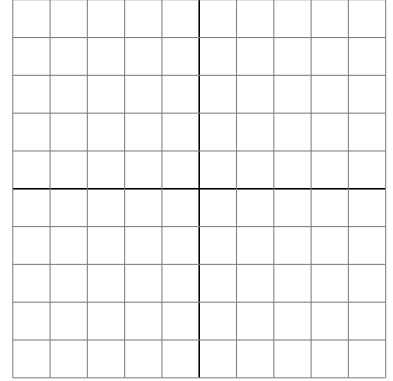
(a) $y = 3x - 2$



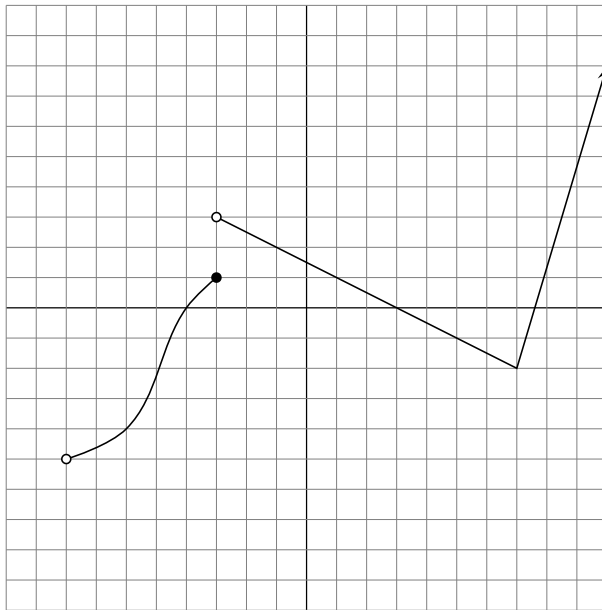
(b) $2x + 5y = 10$



(c) $4x + 2y = 6$



5. A function f is graphed below. Find the following.



(a) $f(5) =$

(b) $f(-3) =$

(c) find the domain of f

(d) find the range of f

(e) find the intervals where f is increasing

(f) find the intervals where f is decreasing

6. Simplify each of the following. Assume that any variables are positive. Your answers should have all radicals reduced entirely, denominators rationalized, and have no negative exponents. Your answer should be in the same form as the original problem (so if it starts with radicals, your answer should not have rational exponents).

(a) $\sqrt[3]{108xy^4} - y\sqrt[3]{32x}$

(d) $\frac{1}{\sqrt{x}}$

(b) $\frac{(x^2y^3)^4(3xy^4)^{-3}}{x^2y}$

(e) $\frac{x-25}{\sqrt{x}-5}$

(c) $\frac{\left(x^{\frac{2}{3}}a^{\frac{1}{6}}\right)^{-\frac{3}{2}}}{(4x^3a)^{-\frac{1}{2}}}$