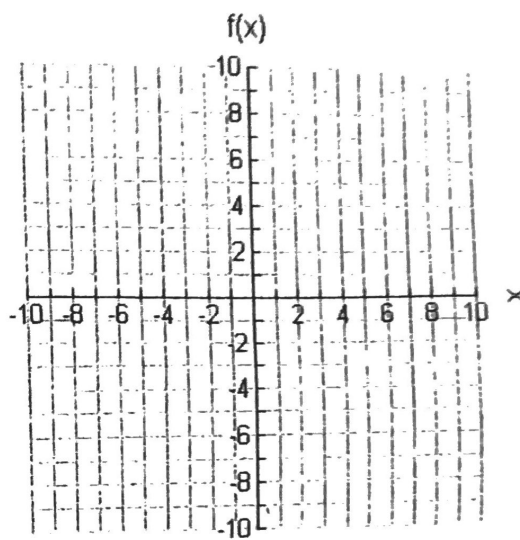


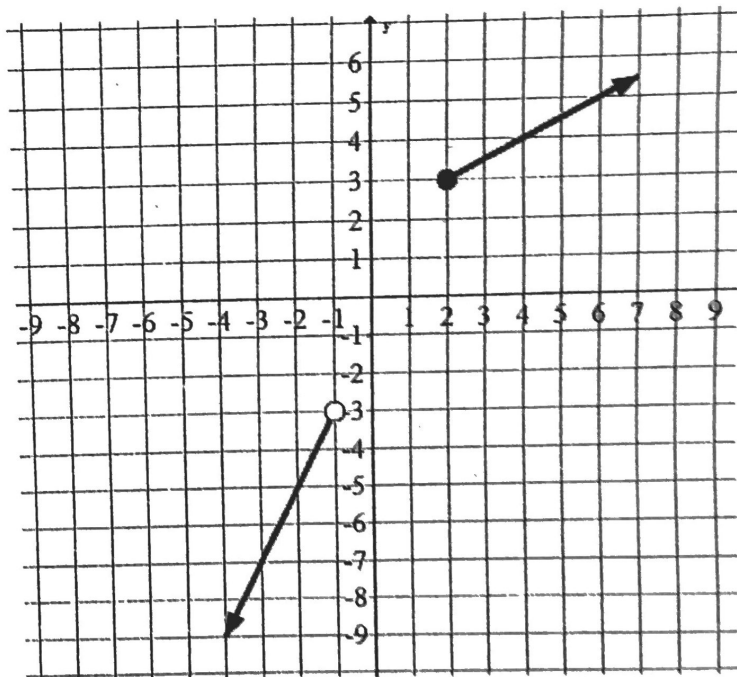
$$h(x) = \begin{cases} x-4 & x > 4 \\ 2(x-3)^2 - 4 & 2 \leq x \leq 4 \\ -2 & x < 2 \end{cases}$$



Continuous or Discontinuous

47. Write the piecewise function for the following graph.

$$f(x) = \begin{cases} 2x-1 & x < -1 \\ \frac{1}{2}x+2 & x \geq 2 \end{cases} \quad (3)$$



Simplify.

48.  $\frac{x^3+64}{x^2-16}$

$$\frac{(x+4)(x^2-4x+16)}{(x+4)(x-4)}$$

48. \_\_\_\_\_

$$\frac{x^2-4x+16}{x-4}$$

$$49. \frac{x^4}{16y^2} \cdot \frac{-8x^3y}{36x^3y^9}$$

$$\frac{-8x^7y}{576x^6y^{10}}$$

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$$\frac{-x^2}{72y^4}$$

$$50. \frac{2x^3 - 12x^2}{x^2 - 4x - 12} \div \frac{8x^3 + 24x^2}{x^2 + 9x + 18}$$

$$\frac{2x^2(x-6)}{(x-6)(x+2)} \cdot \frac{(x+3)(x+6)}{4x^2(x+3)}$$

$$50. \frac{x+6}{4(x+2)}$$

$$51. x^3 + 10x^2 \div \frac{x^2 - 9}{x+3} \cdot \frac{x^2 - 7x + 12}{x+10}$$

$$\frac{x^2(x+10)}{1} \cdot \frac{x+3}{(x+3)(x-3)} \cdot \frac{(x-4)(x-3)}{x+10}$$

$$51. x^2(x-4)$$

$$52. \frac{5x^2 - 8x}{x^2 - 9} \cdot \frac{4x + 9x^2}{x^2 - 9}$$

$$\frac{5x^2 - 8x - 4x - 9x^2}{(x-3)(x+3)} = \frac{-4x^2 - 12x}{(x-3)(x+3)} = \frac{-4x(x+3)}{(x-3)(x+3)}$$

$$52. \frac{-4x}{x-3}$$

$$53. \frac{6v}{v+5} + \frac{5v}{v-5}$$

$$\frac{6v(v-5) + 5v(v+5)}{(v+5)(v-5)} = \frac{6v^2 - 30v + 5v^2 + 25v}{(v+5)(v-5)}$$

$$\frac{11v^2 - 5v}{(v+5)(v-5)}$$