Name: _____

Selected Response: Place the letter of the correct answer in the space provided.

1.   Determine the equation of the oblique asymptote for the graph of   1._____

$$y = \frac{x^2 + x - 6}{x - 4}.$$

(A) $y = x + 5$

(B) $y = x - 4$

(C) $y = x - 2$

(D) $y = x + 3$

2.   State the equation of the vertical asymptote(s) of the graph of   2._____

$$y = \frac{2x^2 - 5x - 3}{x^2 + x - 12}.$$

(A) $x = -4, \ x = 3$

(B) $x = 4, \ x = -3$

(C) $x = -4$

(D) $x = 3$

3.   Which is a point of discontinuity for $f(x) = \dfrac{x^2 + 3x - 18}{x^2 + 9x + 18}$ 3._____

(A) $(-3, -6)$

(B) $\left(3, \dfrac{1}{6}\right)$

(C) $(-6, -3)$

(D) $(-6, 3)$

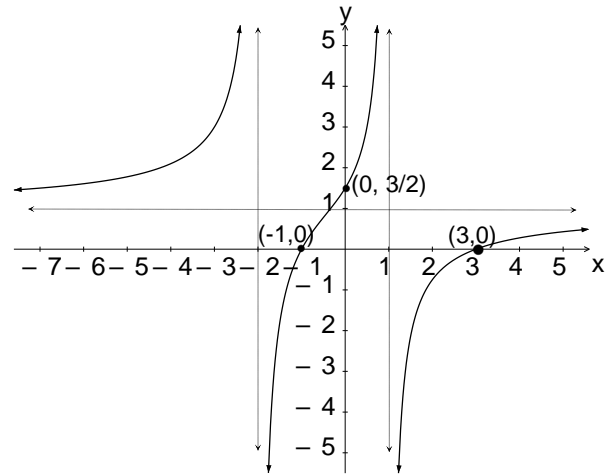4. Which rational function best represents the graph shown? 3. _____

(A) $y = \dfrac{(x-1)(x+3)}{(x-1)(x+2)}$

(B) $y = \dfrac{(x+1)(x-3)}{(x-1)(x+2)}$
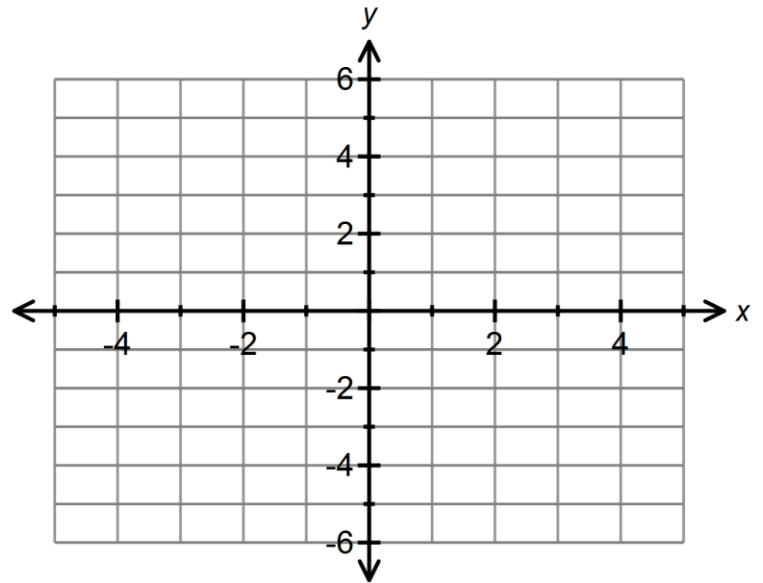
(C) $y = \dfrac{(x+1)(x-3)}{(x+1)(x-2)}$

(D) $y = \dfrac{(x-1)(x+2)}{(x+1)(x-3)}$

Constructed Response : Show all necessary workings to receive full marks

5. Sketch the following graph using intercepts, asymptotes, point of discontinuity, limits, sign diagram and test points.

(a) $y = \dfrac{x^2 + x - 6}{-4x^2 - 16x - 12}$

(b) $y = \dfrac{3x^3 - 12x}{x^3 - 3x^2 - 4x}$