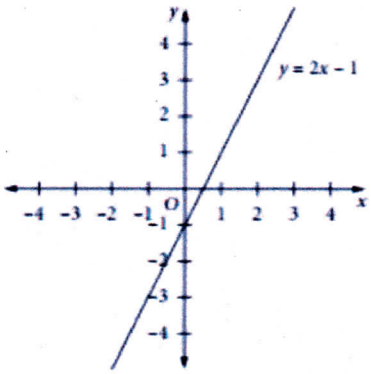
RECIPROCAL FUNCTIONS

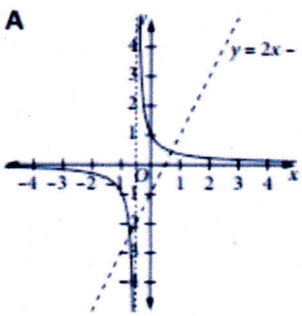
1 The graph of $y = 2x - 1$ is shown.



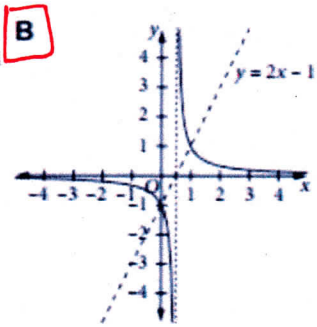
$f(x)$=zero when $x = 1/2$ so asymptote is $x = 1/2$
positive for $x > 1/2$
negative for $x < 1/2$

Which of the following represents the graph of $y = \frac{1}{2x-1}$?

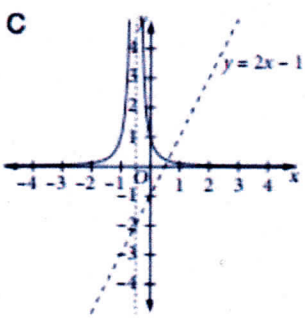
A



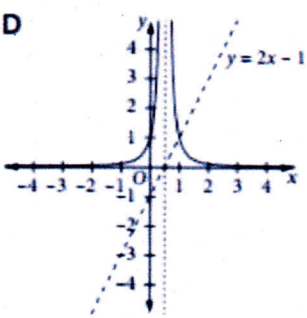
B



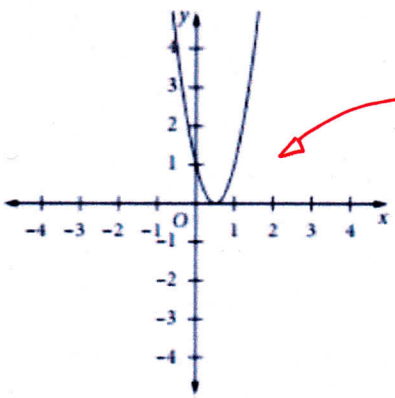
C



D



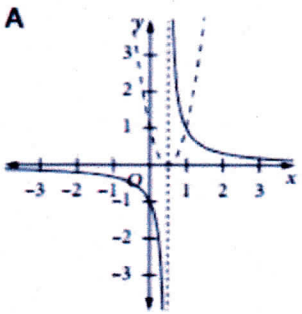
2 The graph of $y = (2x - 1)^2$ is shown.



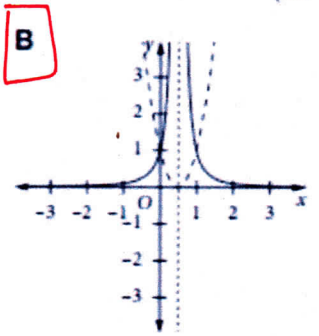
$f(x) = 0$ when $x = 0$ so asymptote is $x = 1/2$
always positive

Which of the following represents the graph of $y = \frac{1}{(2x-1)^2}$?

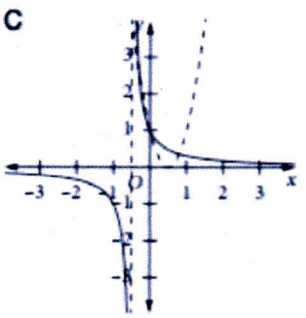
A



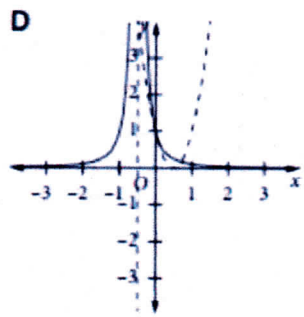
B



C

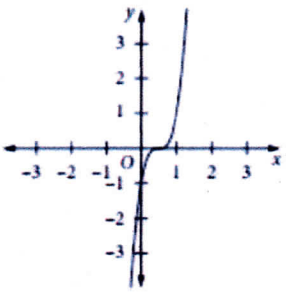


D



RECIPROCAL FUNCTIONS

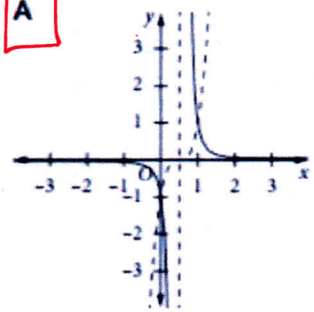
3 The graph of $y = (2x - 1)^3$ is shown.



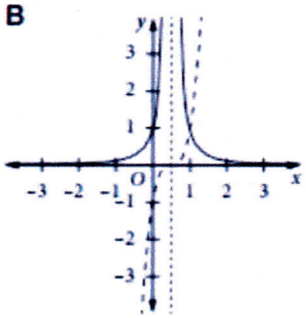
$f(x) = 0$ when $x = 1/2$
no asymptote is $x = 1/2$
positive when $x > 1/2$
negative when $x < 1/2$

Which of the following represents the graph of $y = \dfrac{1}{(2x-1)^3}$?

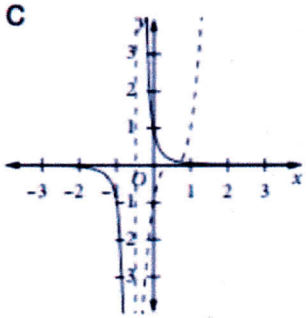
A



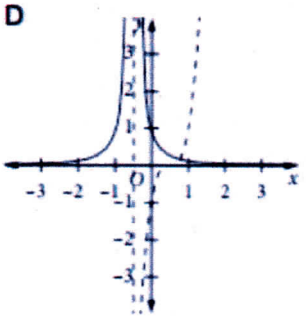
B



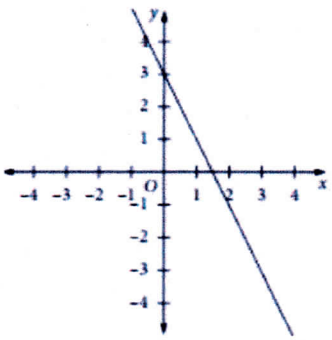
C

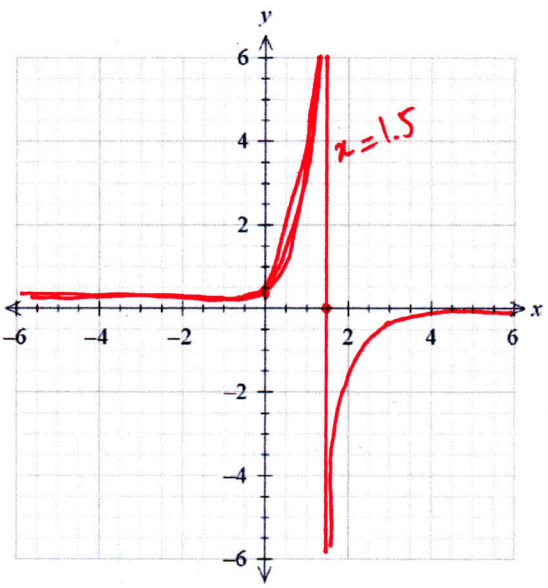


D

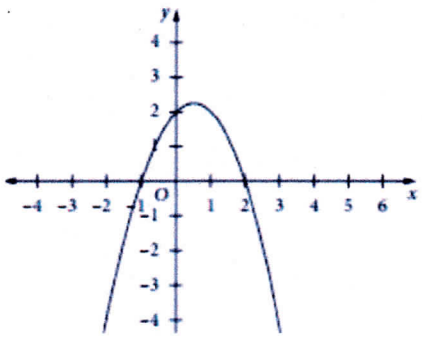


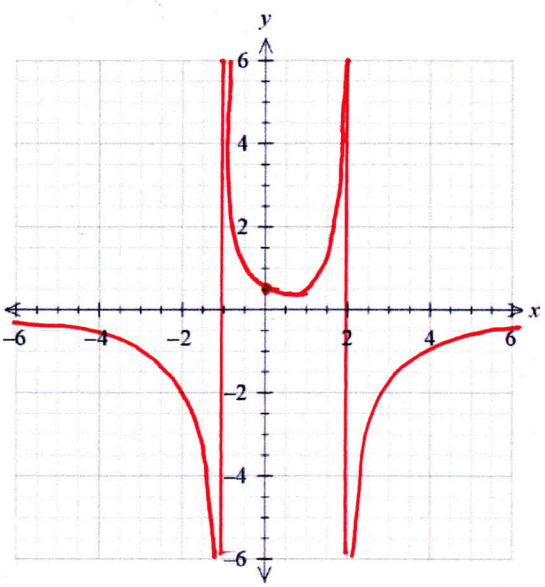
4 Given the graph of $y = 3 - 2x$, draw the graph of $y = \dfrac{1}{3-2x}$.





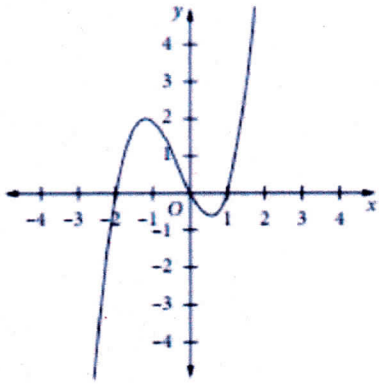
5 Given the graph of $y = (x + 1)(2 - x)$, draw the graph of $y = \dfrac{1}{(x+1)(2-x)}$.

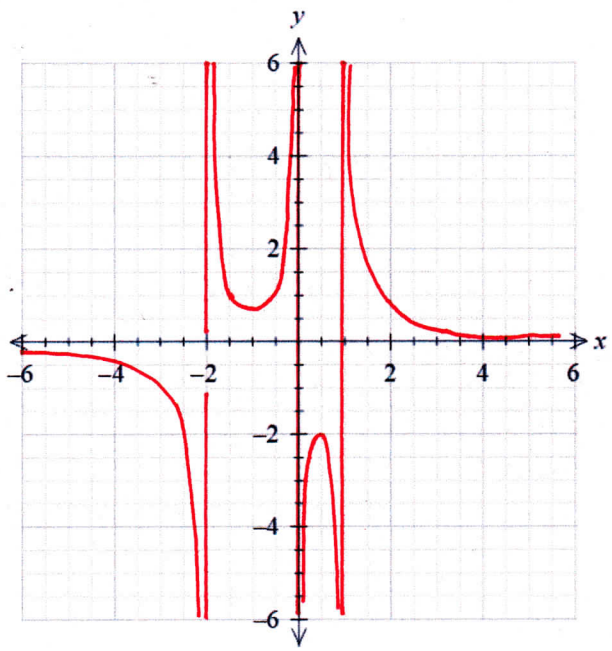




RECIPROCAL FUNCTIONS

6 Given the graph of $y = x(x-1)(x+2)$, draw the graph of $y = \dfrac{1}{x(x-1)(x+2)}$.





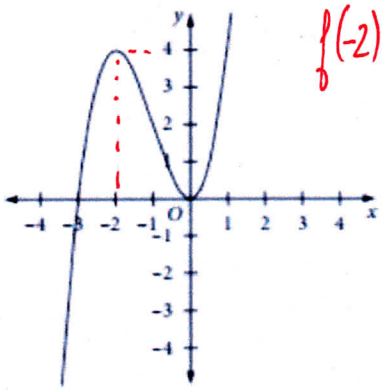
asymptotes are

$x = -2$

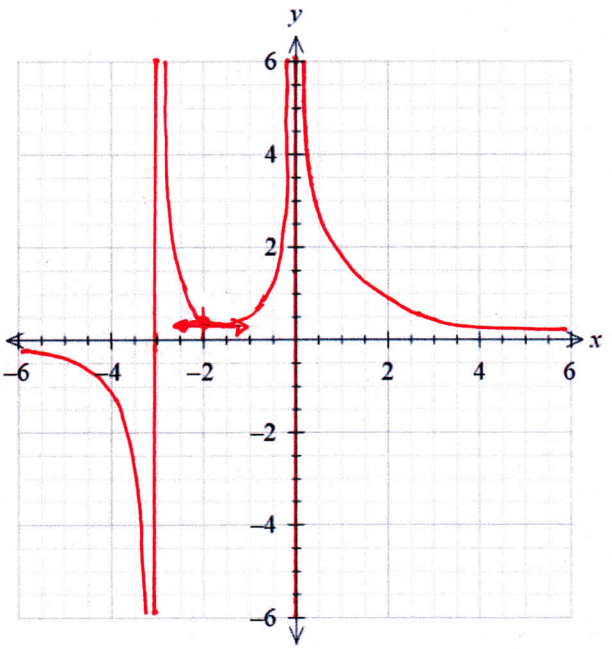
$x = 0$

$x = 1$

7 Given the graph of $y = x^3 + 3x^2$, draw the graph of $y = \dfrac{1}{x^3 + 3x^2}$.



$f(-2) = 4$



asymptotes are $x = -3$

$x = 0$

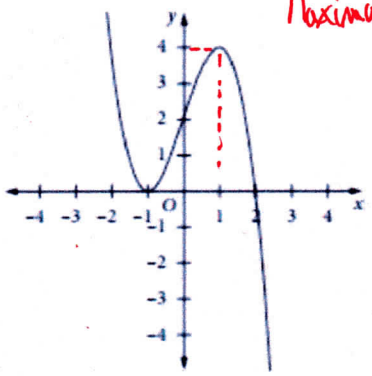
Minimum at $x = -2$

which is $1/4$

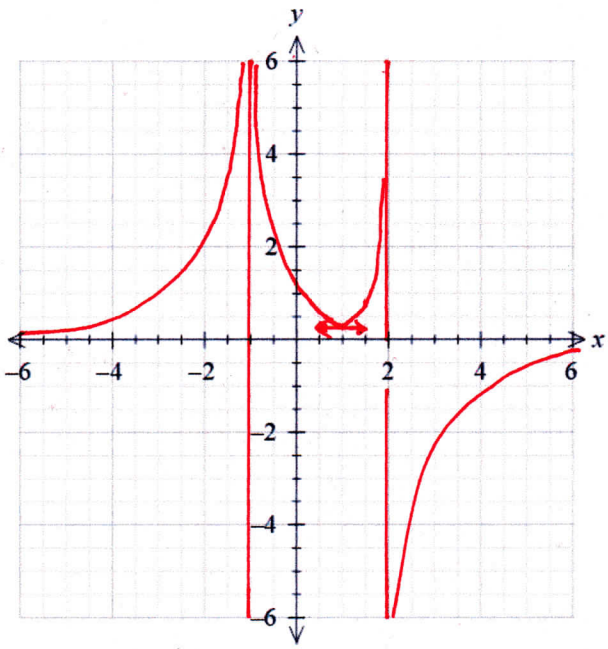
RECIPROCAL FUNCTIONS

10 Given the graph of $y = 2 + 3x - x^3$, draw the graph of $y = \dfrac{1}{2 + 3x - x^3}$.

Maximum at (1,4)



Zeros at $x = -1$ and $x = 2$



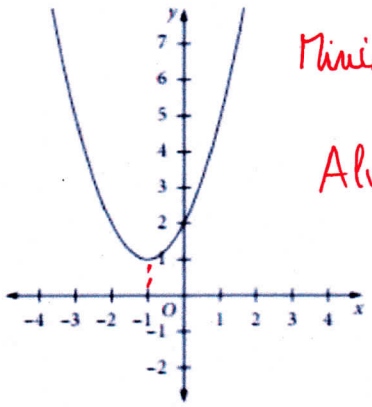
2 asymptotes

$x = -1$ / $x = 2$

Minimum at $x = 1$

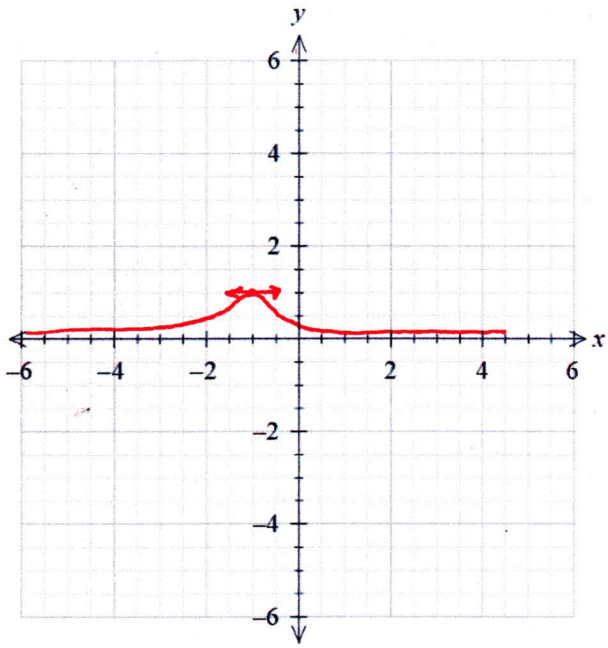
which is $1/4$

11 Given the graph of $y = x^2 + 2x + 2$, draw the graph of $y = \dfrac{1}{x^2 + 2x + 2}$.



Minimum at (-1, 1)

Always positive



Maximum at (-1, 1)