

Consider the function  $f(x) = 2x^2 - 5x + 3$

a) Factorise  $f(x)$

b) Express  $f(x)$  in the form  $a(x - h)^2 + k$

c) Hence, sketch the graph of  $\frac{1}{f(x)}$  indicating on it the equation of the asymptotes, the coordinates of any stationary points and the y intercept.

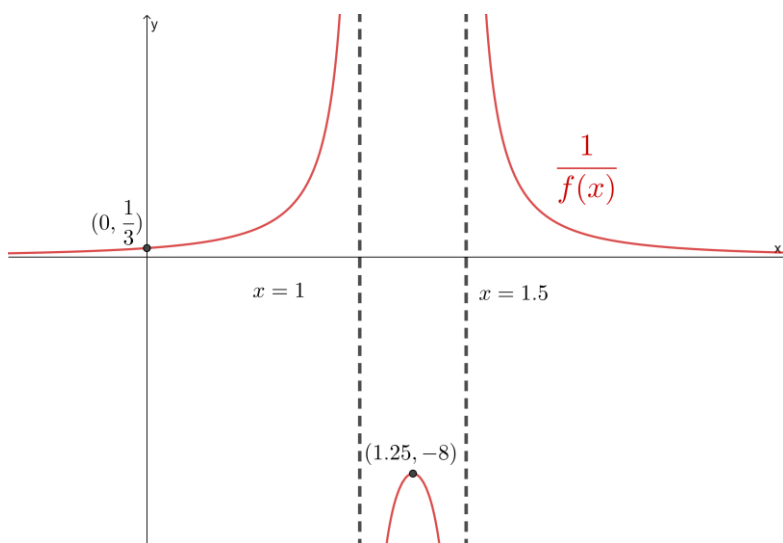
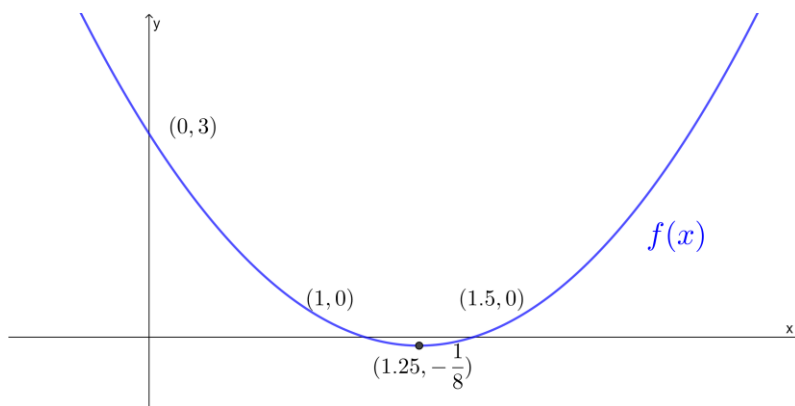
d) Sketch the graph of  $\frac{1}{f|x|}$

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a)  $2x^2 - 5x + 3 \equiv (2x - 3)(x - 1)$

b)  $2x^2 - 5x + 3 \equiv 2\left(x - \frac{5}{4}\right)^2 - \frac{1}{8}$

Use the previous two parts to sketch a graph of  $f(x)$ . This will help you sketch a graph of  $\frac{1}{f(x)}$



Reflect the right-hand part of the graph of  $\frac{1}{f(x)}$  in the y axis

