

## PreCalc 12 – Chapter 2 Practice Non-Calculator Section v1

Name: \_\_\_\_\_

Block: \_\_\_\_\_

Sketching Graphs of Rational Functions  $\frac{P(x)}{Q(x)}$

Sketch the rational function  $f(x) = -\frac{1}{2} \frac{(x^2 - 7x + 12)(x + 4)}{x^2 - 5x + 4}$

1. Use NPV's to find the vertical asymptotes and holes (coordinates). (1 mark)
2. Horizontal asymptotes occur where  $\deg(P(x)) \leq \deg(Q(x))$ . (1 mark)
3. Slant or oblique asymptotes occur when  $\deg(P(x)) = \deg(Q(x)) + 1$ . Use polynomial division for the slant asymptote. (1 mark)
4. Find behaviour near vertical asymptotes. (1 mark)
5. Find x-intercepts. (1 mark)
6. Find y-intercept. (1 mark)
7. Label all intercepts and asymptotes. (1 mark)
8. Join points smoothly. (2 marks)

