

1.

In this question you should show all stages of your working.

Solutions relying on calculator technology are not acceptable.

Using algebra, solve the inequality

$$x^2 - x > 20$$

writing your answer in set notation.

2021

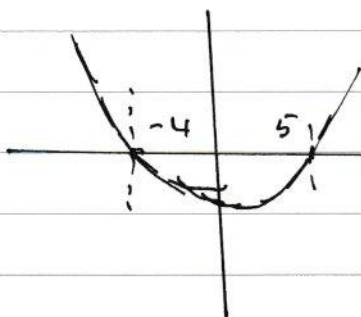
(3)

$$x^2 - x > 20$$

$$x^2 - x - 20 > 0$$

$$(x - 5)(x + 4) > 0$$

Critical values are 5 and -4. Quadratic looks like



It is clear that

$$x^2 - x - 20 > 0 \text{ when}$$

$$x < -4 \text{ or } x > 5$$

$$\text{ie } \{x: x < -4\} \text{ or } \{x: x > 5\}$$

So in total set notation $\{x: x < -4\} \cup \{x: x > 5\}$