**Course Methods Year 11 Test 2**

Student name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Teacher name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Date: Wednesday 4th May 2022**

**Task type: Response**

**Time allowed for this task: 40 mins**

**Number of questions: 8**

**Materials required:** Formula Sheet and 1 page both sides of notes permitted.

No Calculators allowed.

Standard items: Pens (blue/black preferred), pencils (including coloured), sharpener, correction fluid/tape, eraser, ruler, highlighters

Special items: Drawing instruments.

**Marks available: 35 marks**

**Task weighting: 10 %**

**Formula sheet provided: Yes**

**Note: All part questions worth more than 2 marks require working to obtain full marks.**

1. **(1.1.8)** **(4 marks)**

A parabola that has its vertex at the point with coordinates (–1, 6) passes through the point (2, 10).

Find the equation of the parabola.

**Question 2 (1.1.10) (4 marks)**

Find the ***exact y-coordinate*** of the points of intersection of the curve with equation

and the circle

**Question 3 (1.1.11) (3, 2, = 5 marks)**

Consider the quadratic equation + + = 0.

1. Find the discriminant.
2. Re write the discriminant in perfect square form.

Question 4 (1.1.24) (2, 2 = 4 marks)

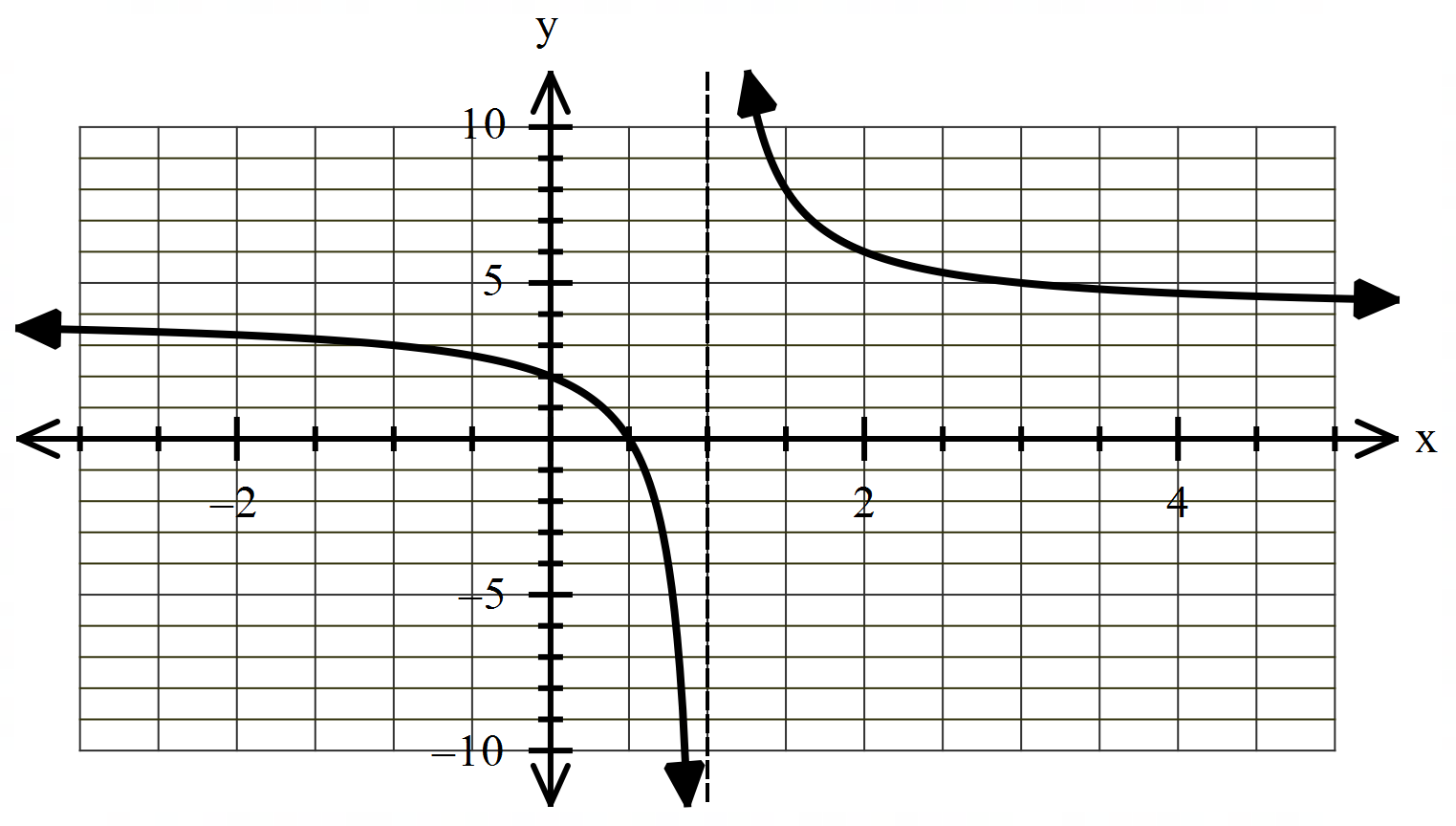
Given function with rule

1. State the domain of
2. Find

**Question 5 (1.1.14) (4 marks)**

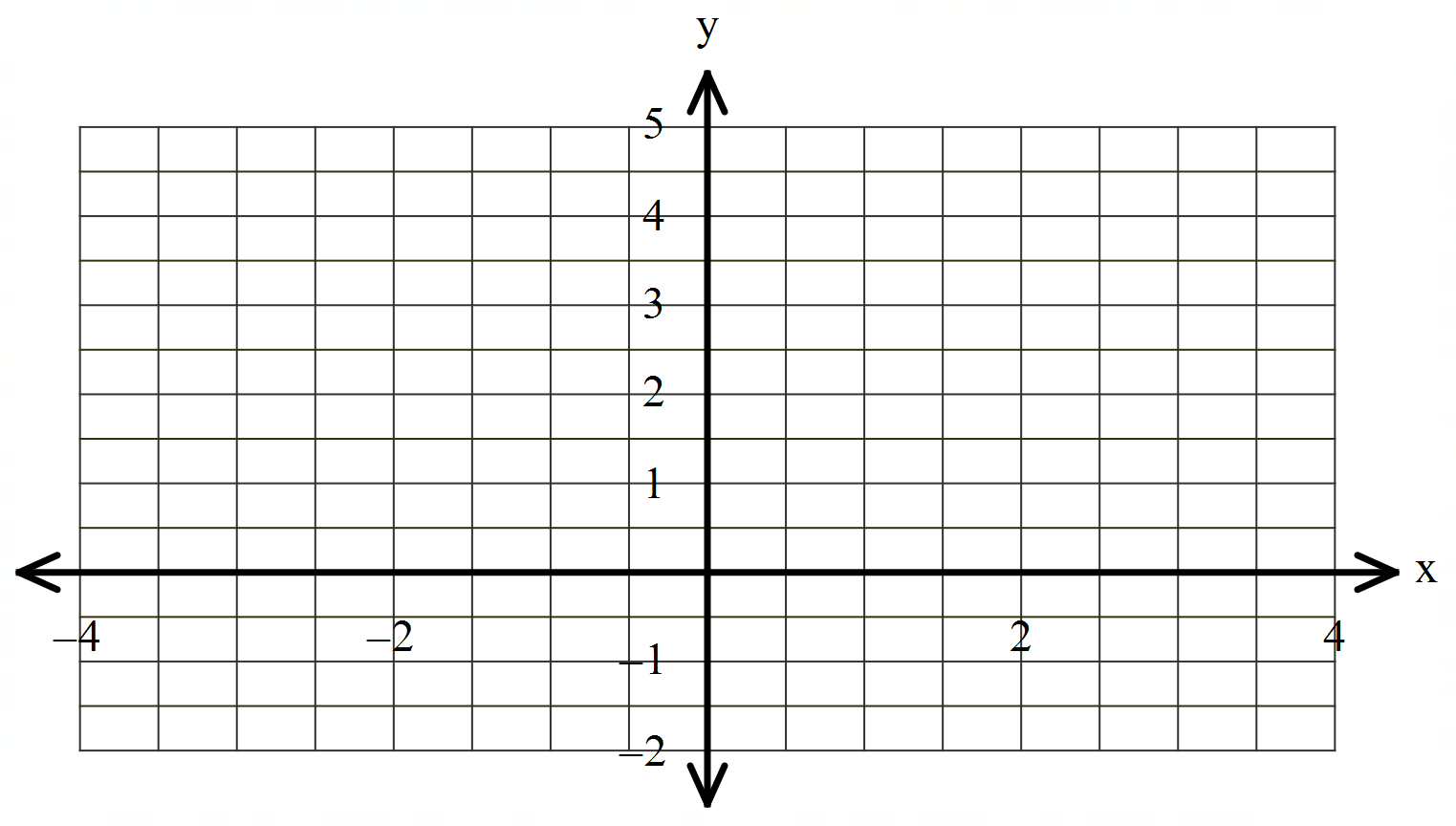
Given that the graph below is in the form

Determine the values of



**Question 6 (1.1.15) (3 marks)**

Sketch within the domain





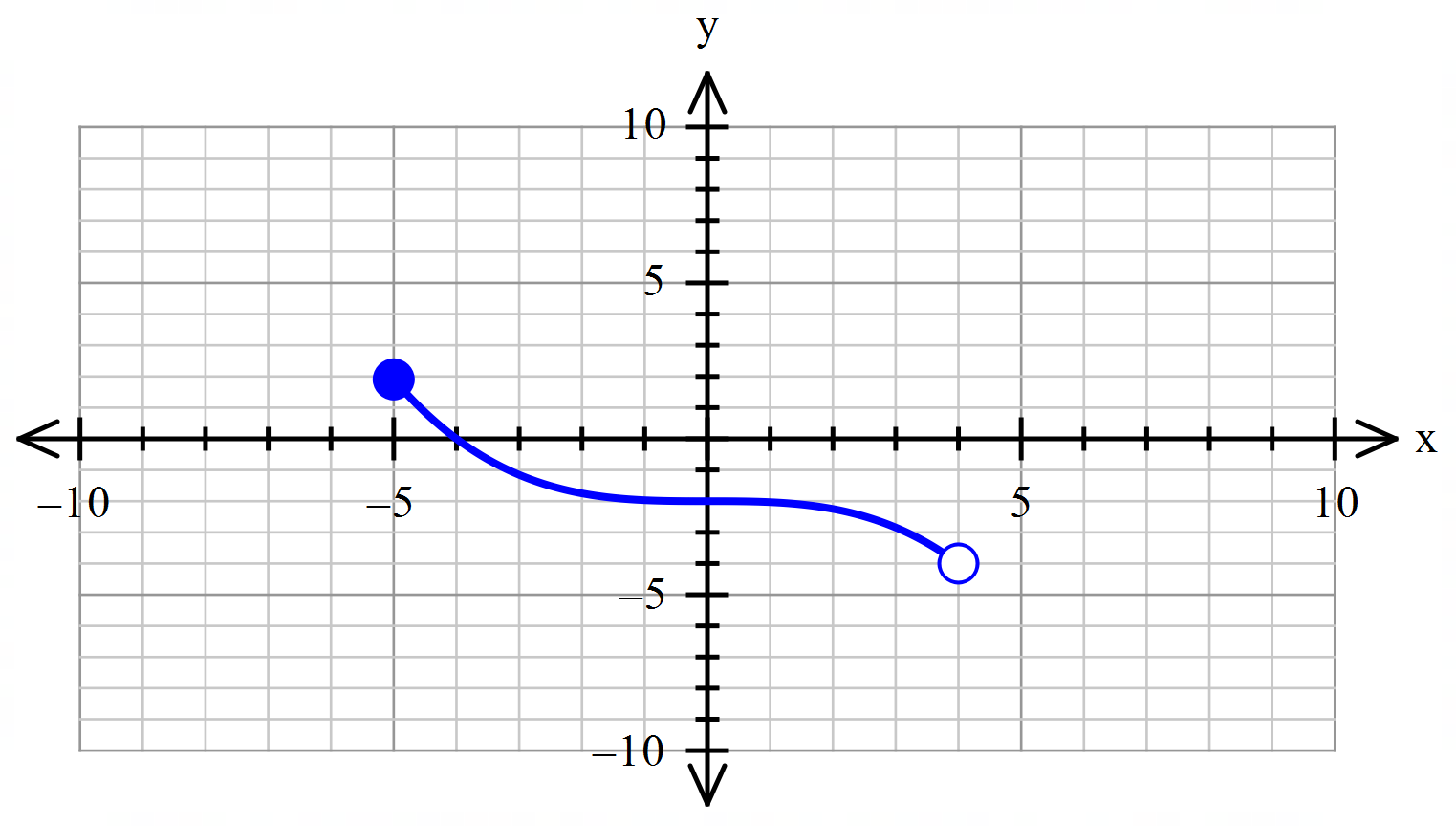
Question 7 (1.1.21, 1.1.22) (2, 4 = 6 marks)

Consider the Polynomial

1. Find
2. Hence or otherwise fully factorise

**Question 8 (1.1.26, 1.1.27) (1, 2, 2 = 5 marks)**

The function is shown below.



(a) State the range of . (1 mark)

(b) Another function is given by .

Describe the transformation required to produce from . (2 marks)

(c) On the same axes above, sketch the graph of . (2 marks)