



Year 11

Student name: _____ Teacher name: _____

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

Question 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)**

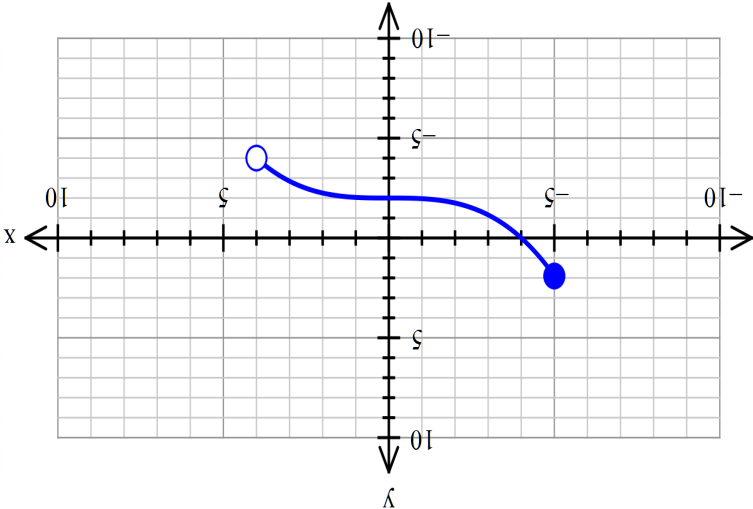
Find the **exact y-coordinate** of the points of intersection of the curve with equation

$$y = x^2 \quad \text{and the circle} \quad x^2 + y^2 = 1$$

Question 8 (1.1.26, 1.1.27)

(1, 2, 2 = 5 marks)

The function $y = f(x)$ is shown below.



(a) State the range of $f(x)$.

(1 mark)

(b) Another function is given by $g(x) = 2f(x - 3)$.

Describe the transformation required to produce $g(x)$ from $f(x)$.

(2 marks)

(b) Find $f(2a + 3)$

(c) On the same axes above, sketch the graph of $y = f(2x) + 2$.

(2 marks)

Question 3 (1.1.11)

(3, 2, 2 = 5 marks)

Consider the quadratic equation $(-2p + 1)x^2 + (p - 2)x + 6p = 0$.

(a) Find the discriminant.

(b) Re write the discriminant in perfect square form.

Question 4 (1.1.24)

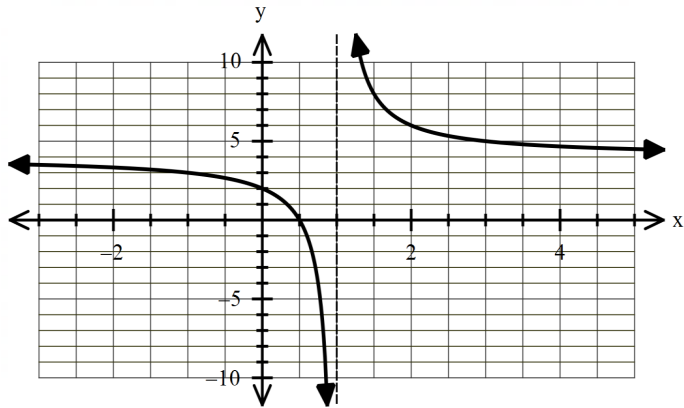
(2, 2 = 4 marks)

Given function f with rule $f(x) = \sqrt{3x - 11}$

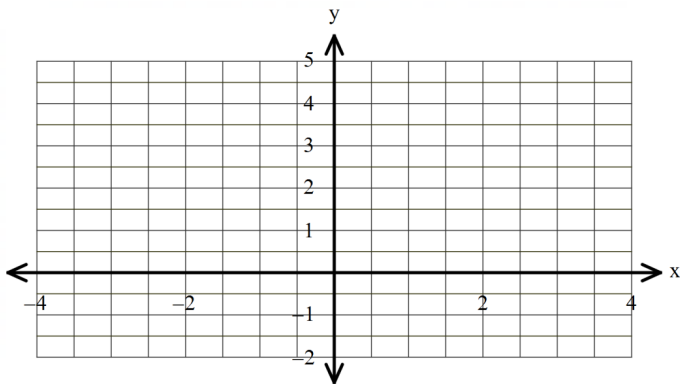
(a) State the domain of $f(x)$

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

Given that the graph below is in the form $y = \frac{a}{x-b} + c$
Determine the values of a , b , and c

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

Sketch $y = \sqrt{-x+1} + 2$ within the domain $-3 < x \leq 3$

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

Consider the Polynomial $G(m) = m^3 - 3m^2 - 6m + 8$

- (a) Find $G(4)$
- (b) Hence or otherwise fully factorise $G(m)$