Mathematics Department Perth Modern

## PERTH MODERN SCHOOL independent Public School Independent Public School

Course Methods Year 11 Test 2

Marks available:	32 marks	
Special items:	Drawing instruments.	rs:
Standard items:		preferred), pencils (including coloured), sharpener, ipe, eraser, ruler, highlighters
Materials required:	Formula Sheet and 1 p No Calculators allowed	1 bage both sides of notes permitted. bawd.
Number of questions:	8	
Time allowed for this task: 40 mins		
Task type:	Kesponse	
Date: Wednesday 4th May 2022		
Student name:	ə <u> </u>	Teacher name:
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Note: All part questions worth more than 2 marks require working to obtain full marks.

Formula sheet provided: Yes

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Task weighting:

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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

$$y = x^2$$
 and the circle  $x^2 + y^2 = 1$ 

Mathematics Department Perth Modern Question 3 (3, 2, = 5 marks)

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

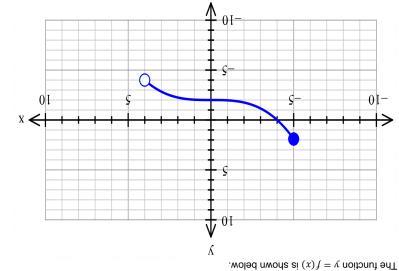
(a) Find the discriminant.

b) Re write the discriminant in perfect square form.

Question 4 (2, 2 = 4 marks)  $\frac{\Delta \cdot L \cdot L \cdot L}{\Delta \cdot L \cdot L} = \frac{\Delta \cdot L \cdot L \cdot L}{\Delta \cdot L \cdot L}$  Given function  $\int dt \, dt \, dt = \int dt \, dt \, L$ 

- State the domain of f(x)
- (b) Find f(2a + 3)

Mathematics Department Perth Modern Question 8 (1, 2, 2 = 5 marks)



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

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

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

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

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Question 5

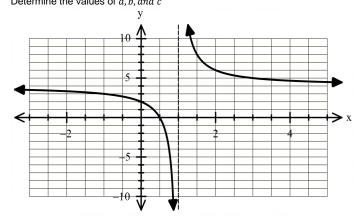
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(4 marks)

(3 marks)

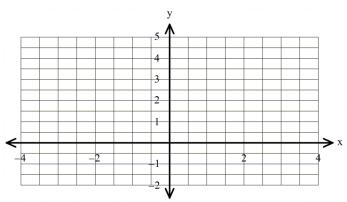
Given that the graph below is in the form  $y = \frac{a}{x-b} + c$ Determine the values of a, b, and c

(1.1.14)



Question 6 (1.1.15)

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



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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)