

**INTENSIVE MATHEMATICS (PBM1035)**  
**Session December 2017**  
**MODEL EXAM PAPER (QUESTION 6)**

Instructions

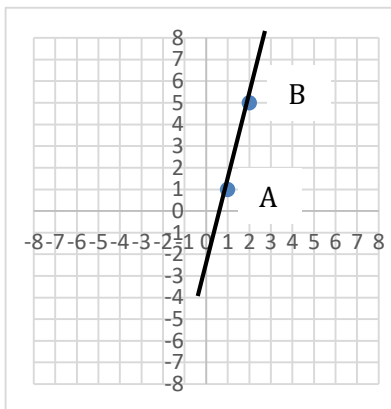
- Answer ALL questions. Write your answers in the spaces provided.
- Show your working. You may use a non-programmable scientific calculator.

Question 1

- (a) Given a function  $f(x) = x^3$ , find  $f(-3)$ ,  $f(-2)$  and  $f(0)$ .
- (b) Draw a graph of  $f(x) = \frac{2}{3}x + 1$  for  $-6 \leq x \leq 6$ .

Question 2

- (a) Find the gradient of the following graph.



- (b) Find the equation of the straight line above.
- (c) Find the midpoint of A and B.
- (d) Find the y-intercept and x-intercept for the straight line given.

Question 3

- (a) Find the equation of a line passing through the given point (2, 1) and perpendicular to the given equation  $y = -6x - 3$ .
- (b) Find the equation of a line passing through the given point (5, 3) and parallel to the given equation  $7x + 4y = 16$ .