

# Topics in Algebra, Trigonometry and Pre-Calculus

31st January 2010

## Instructions

Please note that the following units relate to the following questions:

- Functions - Q1, Q2.
- Cartesian System - Q3, Q4.
- Graphing Linear equations - Q5, Q6.

## Round-up homework

1. Let  $f(x) = 3x + 2$  and  $g(x) = 5x - 1$ . What are the following functions:-
  - (a)  $f(g(x))$ ;
  - (b)  $g(f(x))$ .
2. Which of the following equations, if any, can be expressed as  $y$  as some function of  $x$  ?
  - (a)  $x^2 + xy - y = 1$ ;
  - (b)  $y^2 - 4xy - x = 4$ ;
  - (c)  $x^2 + y^2 = 1$ .
3. What is the distance between the points  $(-1,2)$  and  $(3,3)$ ?
4. What is the midpoint between the points  $(-4,7)$  and  $(1,-5)$ ?
5. What is the equation of the line that passes through the points  $(-6,3)$  and  $(-4,-3)$ ?
6. What is the equation of the line with slope equal to 4, such that the line passes through the point  $(0.5, 4)$ ?