Practice worksheet | Quadratics and Parabolas

Discriminant and number of real roots

Name: _____ Date: _____

6 questions | 16 marks

1. Find the discriminant of $x^2 - 8x + 7 = 0$ and state the number of real roots. [2 marks]

2. Classify the real roots of $2x^2 - 4x + 2 = 0$. [2 marks]

3. Classify the real roots of $2x^2 + x + 3 = 0$. [2 marks]

4. Find c if $x^2 - 4x + c = 0$ has one repeated real root. [3 marks]

5. For which real values of k does $x^2 + kx + 9 = 0$ have two distinct real roots? [3 marks]

6. A graph has equation $y = x^2 - 6x + k$. Describe its x-axis intersections when k is less than, equal to, or greater than 9. [4 marks]