Practice worksheet | Quadratics and polynomial graphs

Discriminant and the nature of roots

Name: _____ Date: _____

6 questions | 15 marks

1. How many real roots has $x^2 - 7x + 10 = 0$? [2 marks]

2. How many real roots has $3x^2 + 2x + 4 = 0$? [2 marks]

3. Find k for a repeated root in $x^2 + 8x + k = 0$. [2 marks]

4. For which real k does $x^2 + 2x + k = 0$ have two distinct real roots? [3 marks]

5. Find k for a repeated root in $x^2 + kx + 9 = 0$. [3 marks]

6. Classify $kx^2 + 2x + 1 = 0$ at $k = 1$ and at $k = 0$. [3 marks]