

The Discriminant

Block: _____ Mark Out Of 16 _____

Find the discriminant of each quadratic equation then state the number and type of solutions (e.g. "2 rational roots").

1) $4p^2 + 6p + 2 = 0$

2) $-4a^2 - 4a - 1 = 0$

3) $5x^2 - 5x + 4 = 0$

4) $4p^2 - p - 14 = -9$

5) $3a^2 = 10 + 7a$

6) $10n^2 - 1 = -10 - 2n + 9n^2$

7) Determine the value(s) of k for which the equation $2x^2 - 3x + k = 0$ has no real roots, then write a possible equation.

8) Consider the equation $-x^2 + 9x + k = 0$. Determine a value of k for which the equation has two distinct, rational roots. Write out the equation. Solve the equation to verify that the roots are rational.