1) Solve for x:
$$x^2 - 5x - 6 = 0$$

2) Find the nature of roots using the quadratic formula
$$y^2 + \frac{3}{4}y = -\frac{5}{4}$$

3) Using the quadratic formula find the Discriminant;
$$z^2 + (z+2)^2 = 290$$

4) Find the sum of the roots for the given quadratic equation:
$$q^2 = 2$$

5) If p and q are the roots of the given quadratic equation, find the value of $p - q$.
$$k^2 = 9k$$

6) Use the quadratic formula to find the roots of the given quadratic equation:
$$2k^2 + 1 = 2\sqrt{2}k$$

7) Daniel and Chloe, together have a collection of 45 coins. If both of them lost 5 coins each, the product of the coins they have now is 124. Find the number of coins they had to start with.

8) The altitude of a right angled triangle is 17 inches less than its base. If the hypotenuse is 25 inches, find the length of its base.

9) The sum of two numbers is 27 and product is 182. Find the numbers.

10) If the product of two successive integral multiples of 5 is 300, find the numbers.

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- Kirk Riley

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1)	$-1, 6$
2)	Roots are imaginary
3)	**576**
4)	0
5)	0
6)	$\dfrac{1}{\sqrt{2}}, \dfrac{1}{\sqrt{2}}$

7)	36, 9
8)	24 inches
9)	13, 14
10)	15, 20

FUN FACT

1. If $D < 0$, roots are imaginary.
2. If $D = 0$, roots are real and equal.
3. For a quadratic equation of the form,
$$ax^2 + bx + c = 0$$
The roots using the Quadratic formula are given as:
$$x = \frac{-b \pm \sqrt{D}}{2a}$$
$$\Rightarrow x = \frac{-b + \sqrt{D}}{2a}, \frac{-b - \sqrt{D}}{2a}$$