Name: _____ Date: _____

## 1.5 Solve Quadratic Equations

**BLM 1–6**

**1.** Solve each quadratic equation using any method.
- **a)** $3x^2 - 12x = 0$
- **b)** $2x^2 + 4x - 6 = 0$
- **c)** $3x^2 + 5x - 2 = 0$
- **d)** $4x^2 - 11x - 8 = 0$

**2.** Determine the value(s) of $k$ for which the expression $x^2 + 4x + k = 0$ will have
- **a)** two equal real roots
- **b)** two real distinct roots

**3. a)** Graph the function $y = 3x^2 - 2x$ for $-3 \le x \le 3$.
- **b)** On the same set of axes, graph the function $y = 1$.
- **c)** Use your graph to determine the points of intersection of the two functions.
- **d)** Verify the solutions algebraically.

**4.** What value(s) of $k$, where $k$ is an integer, will allow each expression to be solved by factoring?
- **a)** $x^2 - 6 = kx$
- **b)** $x^2 + kx = 4$
- **c)** $2x^2 + x + k = 0$
- **d)** $6x^2 + kx + 6 = 0$

**5.** The width of a rectangle is 4 cm less than the length. To the nearest tenth of a centimetre, what length and width will result in a total area of 48 $cm^2$?

**6.** Three lengths of pipe measuring 24 cm, 31 cm, and 38 cm will be used to create a right triangle. The same length of pipe will be cut off each of the three pipes to allow a right triangle to be created. What is that length?

**7.** A garden measuring 4 m by 5 m is to be extended on each side by the same amount to create a rectangular garden of area 25 $m^2$. What amount, to the nearest tenth of a metre, must be added to each side to achieve this?

**8.** A picture measuring 20 cm by 16 cm is to be centred on a mat before it is framed. The mat width on each of the four sides of the picture is to be equal. To the nearest tenth of a centimetre, what width of mat is needed so that the area of the mat and the area of the picture are equal?




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