

Name \_\_\_\_\_

Date \_\_\_\_\_

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# Quadratic Equations: your summary

**1** Fill in every blank from memory. No notes.**2** Check it against the Unit Summary in a different colour.**3** Tick ✓ or X on each card. Every X is a topic to review.vertexmath.ca  
Worksheet, answers &  
this cheat sheet

## Which method?

Write the tool for each case.

$x^2 - x - 12 = 0$

$x^2 + 8x - 3 = 0$

$3x^2 + 7x - 1 = 0$

**1** Solving by factoring☒ ☒**1** Solve  $2x^2 + x - 21 = 0$ .**2** Solve  $x(x + 3) = 28$ .**2** Roots on a graph☒ ☒**3**  $y = x^2 - 4x - 5$ . State the roots of  $x^2 - 4x - 5 = 0$ , then solve  $x^2 - 4x - 5 = 7$ .**3** Completing the square☒ ☒**4** Solve by completing the square:  $x^2 - 8x + 11 = 0$ .**5** Solve  $2x^2 + 8x + 13 = 0$ .**4** The quadratic formula☒ ☒**6** Write the quadratic formula.**7** Solve  $3x^2 - x - 5 = 0$ , exactly and to two decimal places.**5** The discriminant☒ ☒**8** How many real roots:

$9x^2 - 30x + 25 = 0$ ?  $5x^2 + 2x + 1 = 0$ ?

**9** For which  $k$  does  $x^2 + kx + 25 = 0$  have exactly one root?**6** Word problems☒ ☒**10** A deck of width  $x$  surrounds a 15 m by 9 m pool. Pool and deck cover 247 m<sup>2</sup>. Find  $x$ .

## My traps

 Your three most likely mistakes, and how you will catch each one.**1** \_\_\_\_\_ **2** \_\_\_\_\_ **3** \_\_\_\_\_

**8**  $D = 0$ : one;  $D = -16$ : none

**7**  $x = \frac{1 \pm \sqrt{61}}{6}$ ; 1.47 or -1.14

**6**  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

**5**  $2(x + 2)^2 = -5$ : no real roots

Answers to the numbered prompts. Cover this strip until you are done.

**1**  $x = -7/2$  or  $x = 3$

**2**  $x^2 + 3x - 28 = 0$ :  $x = -7$  or  $x = 4$

**3** -1 and 5;  $x = -2$  or  $x = 6$

**4**  $(x - 4)^2 = 5$ :  $x = 4 \pm \sqrt{5}$

**10**  $(15 + 2x)(9 + 2x) = 247$ :

$x^2 + 12x - 28 = 0$ ,  $x = 2$  m

**9**  $k = 10$  or  $k = -10$