

Name _____

Date _____

VERTEXMATH • BUILD YOUR OWN • MCR3U GRADE 11

Quadratic Functions: 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.

$x^2 - x - 6 = 0$

$y = x^2 + 6x + 1$,
min?

$3x^2 + 5x - 1 = 0$

1 Three forms☒ ☒**1** Zeros and axis of symmetry of
 $y = -3(x - 4)(x + 8)$.**2** Expand $y = 2(x + 3)^2 - 5$.**2 Completing the square**☒ ☒**3** Write $y = 4x^2 - 24x + 31$ in vertex form
and state the minimum.**3 Optimization**☒ ☒**4** 44 m of fence encloses three sides of a
pen against a wall. Find the maximum area.**4 Radicals**☒ ☒**5** Simplify $\sqrt{72}$.**6** Rationalize $\frac{4}{3 + \sqrt{5}}$.**5 Inverse of a quadratic**☒ ☒**7** Find f^{-1} for $f(x) = (x + 2)^2 - 1$, $x \geq -2$.**6 Solving**☒ ☒**8** Solve $2x^2 - 3x - 7 = 0$ exactly.**7 The discriminant**☒ ☒**9** How many real roots does $4x^2 - 12x + 9 = 0$ have?**8 Families**☒ ☒**10** Zeros 1 and 7, through $(3, -24)$. Find the
equation.**9 Line and parabola**☒ ☒**11** How many times do $y = x^2 + 4$ and $y = 2x + 3$ meet?

My traps

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

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

1 Zeros 4, -8; axis $x = -2$ **2** $y = 2x^2 + 12x + 13$ **3** $y = 4(x - 3)^2 - 5$; minimum -5 at $x = 3$ **4** $A = w(44 - 2w)$, max at $w = 11$; 242 m²**7** $f^{-1}(x) = -2 + \sqrt{x + 1}$ **8** $x = \frac{3 \pm \sqrt{65}}{4}$ **9** $D = 144 - 144 = 0$; one**10** $y = 3(x - 1)(x - 7)$ **11** $x^2 - 2x + 1 = 0$, $D = 0$; once, at (1, 5)