

Name _____

Date _____

VERTEXMATH • BUILD YOUR OWN • MHF4U GRADE 12

Polynomial 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 factoring?

Write the tool for each case.

$27x^3 - 1$

$x^3 + 2x^2 - 9x - 18$

$x^3 - 2x^2 - 5x + 6$

1 End behaviour and symmetry

☒ ☐

1 Describe the end behaviour of $y = -3x^5 + x^2$.

2 Differences and turning points

☒ ☐

2 The 4th differences are constant at 48. Find the degree and a .

3 Zeros and their order

☒ ☐

3 Zeros, their orders, and the y -intercept of $y = 2(x - 3)^2(x + 1)$.

4 Dividing polynomials

☒ ☐

4 Divide $2x^3 + 3x^2 - 1$ by $x + 1$.

5 Remainder and factor theorems

☒ ☐

5 Is $x - 2$ a factor of $x^3 - 3x^2 + 4$?

6 Cubes and grouping

☒ ☐

6 Factor $27x^3 - 64$.

7 Solving equations

☒ ☐

7 Solve $x^3 - x^2 - 4x + 4 = 0$.

8 Inequalities

☒ ☐

8 Solve $x^2(x - 4) \geq 0$.

My traps Your three most likely mistakes, and how you will catch each one.

1 _____ **2** _____ **3** _____

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

1 Up on the left, down on the right
2 Degree 4; $a = 48/4! = 2$
3 3 (order 2, touch), -1 (order 1, cross); y -intercept 18
4 $Q = 2x^2 + x - 1$, $R = 0$
5 Yes: $P(2) = 8 - 12 + 4 = 0$
6 $(3x - 4)(9x^2 + 12x + 16)$
7 $(x - 1)(x^2 - 4) = 0$: $x = 1, \pm 2$
8 $\{0\} \cup [4, \infty)$