

Polynomials and Rational Expressions: your summary

Name _____

Date _____

vertexmath.ca
Worksheet, answers &
this cheat sheet



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.

Which factoring?

Write the tool for each case.

$6x^2 - 9x$

$x^2 - 25$

$x^2 + bx + c$

1 Adding and multiplying ☒ ☐

1 Expand $(5x - 4)(2x + 7)$.

2 Simplify $(6a^2 - a) - (2a^2 - 5a + 3)$.

6 Multiplying and dividing ☒ ☐

9 List every restriction of $\frac{x+2}{x-3} \div \frac{x-7}{x+8}$.

2 Special products ☒ ☐

3 Expand $(3x - 5)^2$.

4 Write the difference-of-squares product.

7 Adding and subtracting ☒ ☐

10 Simplify $\frac{1}{x-2} - \frac{1}{x+2}$.

3 Factoring ☒ ☐

5 Factor $3x^2 - 11x - 4$.

6 Factor $81y^2 - 1$.

4 Simplifying ☒ ☐

7 Simplify $\frac{x^2 - 4x}{x^2 - 16}$ and state the restrictions.

5 Holes and asymptotes ☒ ☐

8 Find the hole and the vertical asymptote of $y = \frac{x+1}{x^2-1}$.

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 $10x^2 + 27x - 28$

2 $4a^2 + 4a - 3$

3 $9x^2 - 30x + 25$

4 $(a+b)(a-b) = a^2 - b^2$

7 $\frac{x}{x+4}, x \neq 4, -4$

9 $(9y+1)(9y+1)$

5 $(3x+1)(x-4)$

8 Hole at $(-1, -1/2)$; asymptote $x = 1$

6 $x \neq 3, -8, 7$

10 $\frac{x(x-2)(x+2)}{4}, x \neq \pm 2$