

Dividing Polynomials Thanksgiving Maze

skills used:

Dividing polynomial expressions with long division and synthetic division, when appropriate.

standards covered:

CCSS: HSA-APR.B.2, HSA-APR.D.6

TEKs: A2.7.C

VA SOLs: EO.A.2.b, All.1.a

Name: _____ Date: _____

DIVIDING POLYNOMIALS MAZE

Directions: Answer the question in the box that says "start". The answer will lead you to the next question. Keep answering the questions until you reach the "finish" box. If you don't see your answer, try again!

Start
 $(3x^3 - 5x^2 + 4x - 8) \div (x - 2)$

$x + 4$

$(x^2 + 4x + 4) \div (x + 2)$

$x^2 - 1$

$(x^3 - 1) \div (x - 1)$

$3x^2 + x + 6$

$3x^2 + x + 6 \div x - \frac{4}{2}$

$x + 2$

$x^2 + x + 1$

$x + 1 + \frac{-2x}{x+1}$

$(4x^3 + 2x^2 - x + 3) \div (x + 1)$

$x + 3$

$(2x^2 + 7x + 3) \div (2x + 1)$

how to use this resource

This is a great individual practice activity to use when reviewing how to divide polynomials using long division and synthetic division.

My favorite ways to use this maze worksheet is as a review station in November.

This is also a **substitute-friendly** assignment!

Name: **ANSWER KEY** Date: _____

DIVIDING POLYNOMIALS MAZE RECORDING SHEET

1. $(3x^3 - 5x^2 + 4x - 8) \div (x - 2)$ $\begin{array}{r} 2 \overline{) 3x^3 - 5x^2 + 4x - 8} \\ \underline{6x^2 - 12} \\ 3x^2 + 4x - 8 \\ \underline{6x^2 - 12} \\ 3x^2 + 4x - 8 \\ \underline{6x^2 - 12} \\ 0 \end{array}$ $3x^2 + x + 6 + \frac{4}{x-2}$	2. $(2x^2 + 7x + 3) \div (2x + 1)$ $\begin{array}{r} x+3 \\ 2x+1 \overline{) 2x^2+7x+3} \\ \underline{-(2x^2+x)} \\ 6x+3 \\ \underline{-(6x+3)} \\ 0 \end{array}$
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Name: _____ Date: _____

DIVIDING POLYNOMIALS MAZE

Directions: Answer the question in the box that says "start". The answer will lead you to the next question. Keep answering the questions until you reach the "finish" box. If you don't see your answer, try again!

3. $(4x^3 + 2x^2 - x + 3) \div (x + 1)$ $\begin{array}{r} -1 \overline{) 4x^3 + 2x^2 - x + 3} \\ \underline{-4x^2 - 4x - 3} \\ 4x^2 - 2x + 6 \end{array}$ $4x^2 - 2x + 6$	5. $(6x^2 + 17x + 5) \div (2x + 1)$ $\begin{array}{r} 3x+7 \\ 2x+1 \overline{) 6x^2+17x+5} \\ \underline{-(6x^2+3x)} \\ 14x+5 \\ \underline{-(14x+7)} \\ -2 \end{array}$ $3x + 7 + \frac{-2}{2x+1}$
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You may also enjoy...

DIVIDING POLYNOMIALS

Dividing Polynomials

Directions: View at 50% if you're on a small screen. Type your answer into the "Answer" column. If you answer correctly, the box will turn green and part of the picture will be revealed. If you answer incorrectly, the box will turn red.

Questions	Answers
1) $8x^4 + 20x^3 + 16x^2 + 4x$	1
2) $(x^2 + 12x + 11) \div (x + 1)$	2
3) $(4x^2 - 19x + 21) \div (4x - 7)$	3
4) $-6x^5 + 18x^3 - 21x^2 + -3x^2$	4
5) $(30x^2 + 21x - 9) \div (10x - 3)$	5
6) $(7x^2 - 84x + 77) \div (x - 11)$	6
7) $(5x^2 - 38x - 120) \div (5x + 12)$	7
8) $(3x^2 + 24x - 60) \div (x + 10)$	8
9) $56x^7 - 80x^6 + 16x^5 - 24x^4 + 8x^3$	9
10) $(5x^2 + 28x + 15) \div (5x + 3)$	10



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Self-Checking

DIVIDING POLYNOMIALS Choice Board

Dividing Polynomials

Directions: Choose problems from each column. Show your work in the boxes.

ANSWER KEY

Dividing Polynomials

Directions: Choose problems from each column. Show your work in the boxes.

1. $(12x^5 + 36x^4 + 6x^2) \div 6x^2$
 $2x^3 + 6x^2 + 1$

2. $(x^2 - 3x + 2) \div (x - 1)$
 $x - 2$

3. $(56m^6 + 9m^5 + 63m^4) \div -9m^3$
 $-6m^3 - m^2 - 7m$

4. $(x^2 - 7x - 18) \div (x + 2)$
 $x - 9$

5. $(x^2 - x - 110) \div (x + 10)$
 $x - 11$

6. $(-16y^8 + 24y^{10} - 40y^6) \div 12y^4$
 $-\frac{4}{3}y^4 + 2y^6 - \frac{10}{3}y^2$

7. $(x^2 - x - 110) \div (x + 10)$
 $x - 11$

8. $(5x^2 - 31x - 72) \div (x - 8)$
 $5x + 11$

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SYNTHETIC DIVISION

Differentiated Circuit worksheet

SYNTHETIC DIVISION OF POLYNOMIALS CIRCUIT

Directions: A circuit is a route that starts and ends at the same place. Start in the first problem. Search through the remaining boxes for the answer you get. Complete that question. Continue until you have completed the circuit. Record your path below.

1. $2x^3 - 6x^2 + 11x - 6$ by $(x - 2)$. Previous Answer: $x^2 - 4x + 3$

2. Divide $(x^3 + 5x^2 - 2x + 1)$ by $(x - 2)$. Previous Answer: $x^2 + 7x + 9$

3. Divide $(x^3 + 5x^2 - 6)$ by $(x - 1)$. Previous Answer: $x + 1$

4. Divide $(4x^3 + 2x^2 - 1)$ by $(x - 1)$. Previous Answer: $x^2 + 4x + 3$

1 → 9 → 6 → 8 → 3 → 5 → 7 → 4

2 versions + Answer key included

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Answer Key
Name: _____ Date: _____
ADDING & SUBTRACTING RATIONAL EXPRESSIONS
Directions: Add or subtract the rational expressions. Show your work.

Solving Systems of Equations
Date: _____
Solve systems of equations using substitution or elimination. Check your solution.
2. $2x - 6y = -18$
 $x = 3y - 9$
 $2(3y - 9) - 6y = -18$
 $6y - 18 - 6y = -18$
 $-18 = -18$
infinitely many solutions

ANSWER KEY
Solving Systems of Equations
Date: _____
Solve systems of equations using substitution or elimination. Check your solution.
 $2. 2x - 6y = -18$
 $x = 3y - 9$
 $y = 2 + 5$
 $y = 7$
 $(2, 7)$

Multiplying & Dividing Rational Expressions
Date: _____
Directions: Multiply or divide the rational expressions. Show your work.

Rational Expression Operations - Addition & Subtraction
Directions: Answer each question and type the question number with the matching answer in the answer column to the right.

#	Question	Answer	Type the matching question numbers here
1	$\frac{5}{x} + \frac{3}{x+1}$	$\frac{2x+1}{x+2}$	
2	$\frac{2}{x+4} - \frac{x^2}{x^2-16}$	$-\frac{1}{x^2-1}$	
3	$\frac{x+2}{x^2+4x+4} + \frac{2x}{x+2}$	$\frac{2x^2+2x+5}{x^2+x-2}$	
4	$\frac{x}{x-2} + \frac{3}{x-1}$	$-\frac{x^2+2x-8}{x^2-16}$	
5	$\frac{x}{4x+8} - \frac{1}{x^2+2x}$	$\frac{8x+5}{x^2+1}$	
6	$\frac{x+2}{x-1} + \frac{x-1}{x+2}$	$\frac{x^2-3x+7}{x^2-4}$	
7	$\frac{2x+1}{x^2-4} + \frac{x-3}{x+2}$	$\frac{x^2+2x-6}{x^2-3x+2}$	
8	$\frac{x^2+2x}{x^2-1} - \frac{x+1}{x-1}$	$\frac{x-2}{4x}$	

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hey there!

My name is Malia and I'm passionate about making learning and practicing math fun. I love creating engaging math resources for my students and I hope your students enjoy this activity too!

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