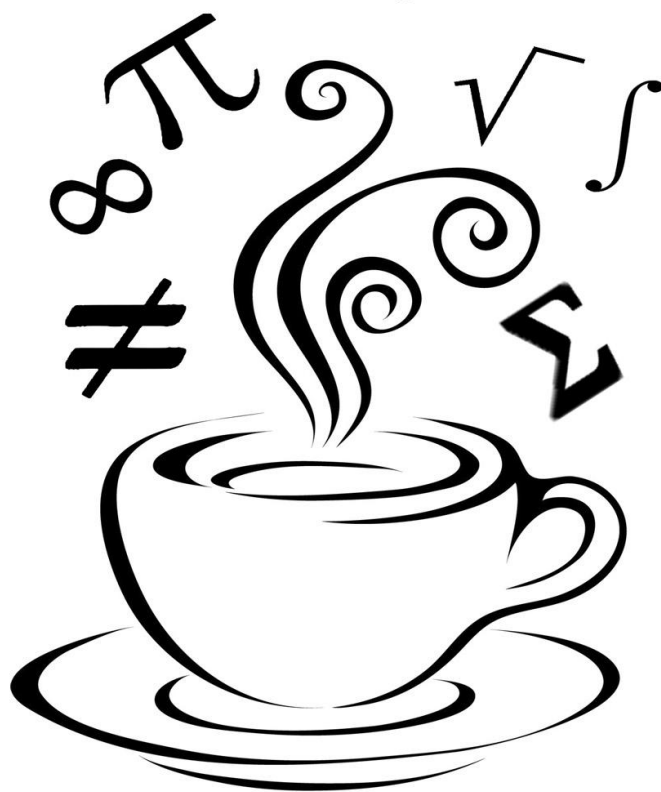


Dividing a Polynomial by a Binomial
Without a Coefficient in the Divisor

We're Bruyn Math



Shari Bruyn & Associates
Putting the Fun in the Fundamentals of Math

Polynomials - Dividing a Polynomial by a Binomial

Below are seven division problems with the solution. However, part of the solution below is covered with a black square containing a letter. Match the letter with the part of the solution that belongs under the square at the bottom of the page to discover an Ancient Chinese Curse.

$$1. (4x^4 - 10x^2 - 25) \div (x + 2) = \blacksquare A \blacksquare - 8x^2 \blacksquare H \blacksquare - 12 - \frac{1}{x+2}$$

$$2. (2x^5 - 15x^3 - 19x + 22) \div (x + 3) = 2x^4 \blacksquare U \blacksquare + 3x^2 \blacksquare V \blacksquare + 8 + \frac{\blacksquare E \blacksquare}{x+3}$$

$$3. (3x^4 + 8x^3 - 4x^2 + 1) \div (x + 1) = \blacksquare O \blacksquare + 5x^2 \blacksquare B \blacksquare + 9 + \frac{\blacksquare Y \blacksquare}{x+1}$$

$$4. (3x^4 - 2x^3 - 15x^2) \div (x + 2) = 3x^3 \blacksquare I \blacksquare + x - 2 + \frac{\blacksquare G \blacksquare}{x+2}$$

$$5. (3x^5 + 5x^4 - 5x^2 + 3x) \div (x + 1) = 3x^4 \blacksquare R \blacksquare - 2x^2 \blacksquare M \blacksquare + 6 + \frac{\blacksquare T \blacksquare}{x+1}$$

$$6. (x^4 + 5x^3 + 5x^2 - 4x - 1) \div (x + 3) = \blacksquare W \blacksquare + 2x^2 \blacksquare D \blacksquare - 1 + \frac{2}{x+3}$$

$$7. (2x^4 + 12x^3 + 10x^2 - 29x - 20) \div (x + 4) = 2x^3 \blacksquare N \blacksquare - 6x \blacksquare S \blacksquare$$

-3x 4x³ -8 -8 3x³ -6x³ 2x³ -2 -9x -2 2x³ -8

x³ -8x² -5 6x -9x -2 4 2x³ 4x³ 4x² -6 -2 -x

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$$1. (4x^4 - 10x^2 - 25) \div (x + 2) = \blacksquare A \blacksquare - 8x^2 \blacksquare H \blacksquare - 12 - \frac{1}{x+2}$$

$$A = 4x^3 \quad H = 6x$$

$$2. (2x^5 - 15x^3 - 19x + 22) \div (x + 3) = 2x^4 \blacksquare U \blacksquare + 3x^2 \blacksquare V \blacksquare + 8 + \frac{\blacksquare E \blacksquare}{x+3}$$

$$U = -6x^3 \quad V = -9x \quad E = -2$$

$$3. (3x^4 + 8x^3 - 4x^2 + 1) \div (x + 1) = \blacksquare O \blacksquare + 5x^2 \blacksquare B \blacksquare + 9 + \frac{\blacksquare Y \blacksquare}{x+1}$$

$$O = 3x^3 \quad B = -9x \quad Y = -8$$

$$4. (3x^4 - 2x^3 - 15x^2) \div (x + 2) = 3x^3 \blacksquare I \blacksquare + x - 2 + \frac{\blacksquare G \blacksquare}{x+2}$$

$$I = -8x^2 \quad G = 4$$

$$5. (3x^5 + 5x^4 - 5x^2 + 3x) \div (x + 1) = 3x^4 \blacksquare R \blacksquare - 2x^2 \blacksquare M \blacksquare + 6 + \frac{\blacksquare T \blacksquare}{x+1}$$

$$R = 2x^3 \quad M = -3x \quad T = -6$$

$$6. (x^4 + 5x^3 + 5x^2 - 4x - 1) \div (x + 3) = \blacksquare W \blacksquare + 2x^2 \blacksquare D \blacksquare - 1 + \frac{2}{x+3}$$

$$W = x^3 \quad D = -x$$

$$7. (2x^4 + 12x^3 + 10x^2 - 29x - 20) \div (x + 4) = 2x^3 \blacksquare N \blacksquare - 6x \blacksquare S \blacksquare$$

$$N = 4x^2 \quad S = -5$$

M	A	Y	Y	O	U	R	E	V	E	R	Y	
-3x	4x ³	-8	-8	3x ³	-6x ³	2x ³	-2	-9x	-2	2x ³	-8	
W	I	S	H	B	E	G	R	A	N	T	E	D
x ³	-8x ²	-5	6x	-9x	-2	4	2x ³	4x ³	4x ²	-6	-2	-x

May your every wish be granted.