

# Why is an Idea Like the Pacific?

For each exercise below, add the polynomials. Find your answer at the bottom of the page and write the letter of that exercise above it.

Ⓓ  $6x + 9$

$\frac{x-1}{7x+8}$

Ⓘ  $3x - 4$

$\frac{5x-7}{8x-11}$

Ⓒ  $8x^2 + 2x + 1$

$\frac{x^2 - 4x + 7}{9x^2 - 2x + 8}$

Ⓔ  $-5x^2 - 5x + 3$

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

Ⓖ  $(7x^2 + 3x + 9) + (2x^2 + 5x - 2) = 9x^2 + 8x + 7$

Ⓒ  $(-3x^2 + x - 7) + (8x^2 - 4x - 4) = 5x^2 - 3x - 11$

Ⓙ  $(6x^3 + 2x^2 - 3x) + (3x^3 - 10x^2 - x) = 9x^3 - 8x^2 - 4x$

Ⓙ  $(-4x^3 + 6x + 1) + (5x^2 - x - 12) = -4x^3 + 5x^2 + 5x - 11$

Ⓒ  $(9x^3 - x^2 + 8) + (-9x^3 + 2x^2 + 3x) = x^2 + 3x + 8$

Ⓔ  $(2x^4 + 5x^2 - 11) + (-6x^4 - 7x^2 + 1) = -4x^4 - 2x^2 - 10$

Ⓖ  $(-4x^4 + 3x^3 - 7x^2 - x) + (-9x^3 + 7x^2 - 5x - 1) = -4x^4 - 6x^3 - 6x - 1$

Ⓙ  $(4x^2 + 3xy - y^2) + (x^2 - 8xy - 2y^2) = 5x^2 - 5xy - 3y^2$

Ⓙ  $(2x^2y - xy^2) + (6x^2y + 7xy^2) = 8x^2y + 6xy^2$

Ⓙ  $(x^3y + 3x^2y^2 + 2xy^3) + (2x^3y - 9x^2y^2 - xy^3) = 3x^3y + 6x^2y^2 + xy^3$

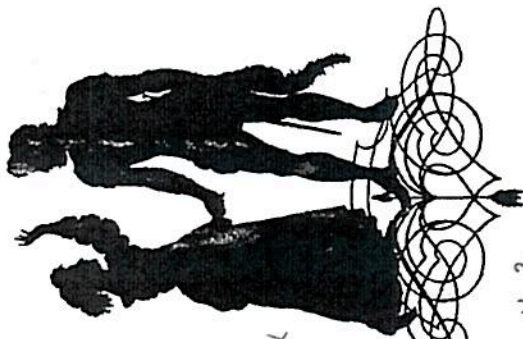
I	T	S		J	V	S	T	A	N	O	T	I	O	N
$8x - 11$	$x^2 - 6x + 3$	$8x^2y - 3xy^2$	$5x^2 - 5xy - 3y^2$	$5x^2 - 3x - 11$	$-4x^4 - 2x^2 - 10$	$7x + 8$	$-4x^3 + 5x^2 - 3x - 1$	$8x^2y + 6xy^2$	$5x^2 - 5xy - 11$	$9x^2 + 8x + 7$	$x^2 + 3x + 8$	$3x^3y - 6x^2y^2 + xy^3$	$9x^3 - 8x^2 - 4x$	$9x^2 - 2x + 8$
$-4x^3 + 5x^2 + 5x - 11$														$-4x^4 - 6x^3 - 6x - 1$

# Daffynition Decoder

1. Romantic:  $\frac{A}{11} \frac{N}{13} \frac{I}{8} \frac{T}{12} \frac{A}{11} \frac{L}{11} \frac{I}{8} \frac{A}{13} \frac{N}{13} \frac{I}{8} \frac{N}{13} \frac{S}{10} \frac{E}{3} \frac{C}{5} \frac{T}{12}$   
 Roman Ticks
2. American:  $\frac{A}{11} \frac{H}{2} \frac{A}{11} \frac{P}{9} \frac{Y}{6} \frac{C}{5} \frac{O}{7} \frac{N}{13} \frac{T}{12} \frac{A}{11} \frac{I}{8} \frac{N}{13} \frac{E}{3} \frac{R}{4}$   
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For each exercise below, subtract the second polynomial from the first. Find your answer in the answer column and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it. Keep working and you will decode the "de-fun-itions."

- ①  $(7x + 4) - (2x + 9) = 5x - 5$
- ②  $(3x + 12) - (5x - 6) = -2x + 18$
- ③  $(-4x^2 + 10) - (6x^2 - 9) = -10x^2 + 19$
- ④  $(2x^2 + 3x + 8) - (x^2 + 5x - 1) = x^2 - 2x + 9$
- ⑤  $(-x^2 + 9x - 2) - (9x^2 - 4x + 4) = -10x^2 + 13x - 6$
- ⑥  $(3x^2 + 7x + 1) - (8 + 5x + x^2) = 2x^2 + 2x - 7$
- ⑦  $(4x^3 + 6x^2 - 8x) - (x^3 - 2x^2 + 12x) = 3x^3 + 8x^2 - 20x$
- ⑧  $(x^3 + 2x^2 + 5x) - (3x^2 - x - 7) = x^3 - x^2 + 6x + 7$
- ⑨  $(x^4 + 8x^2 - 1) - (x^2 - 3x^3 + x^4) = 3x^3 + 7x^2 - 1$
- ⑩  $(5x^4 - 2x^2) - (3x - 2x^2 - 4x^3 + 6x^4) = -x^4 + 4x^3 - 3$
- ⑪  $(3x^2 + 7xy - 2y^2) - (x^2 - 6xy + 2y^2) = 2x^2 + 13xy - 4y^2$
- ⑫  $(-x^2 - 9xy + 5y^2) - (4x^2 - 2xy - y^2) = -5x^2 - 7xy + 6y^2$
- ⑬  $(4x^2y - 3xy^2) - (3x^2y - 8xy^2) = 12x^2y - 6xy^2$



Answers:

- (M)  $-x^4 + 4x^3 - 7x^2$   
 (S)  $-x^4 + 4x^3 - 3x$   
 (U)  $3x^3 + 5x^2 + 7$   
 (L)  $5x - 5$   
 (E)  $-10x^2 + 19$   
 (F)  $2x^2 + 2x - 19$   
 (C)  $-10x^2 + 13x - 6$   
 (H)  $-2x + 18$   
 (T)  $-5x^2 - 7xy + 6y^2$   
 (O)  $3x^3 + 8x^2 - 20x$   
 (P)  $3x^3 + 7x^2 - 1$   
 (R)  $x^2 - 2x + 9$   
 (A)  $2x^2 + 13xy - 4y^2$   
 (N)  $x^2y + 5xy^2$   
 (Y)  $2x^2 + 2x - 7$   
 (B)  $-5x^2 - 6xy + 7y^2$   
 (I)  $x^3 - x^2 + 6x + 7$

$$\textcircled{1} (7x+4) - (2x+9) = 7x+4-2x-9 = \boxed{5x-5}$$

$$\textcircled{2} (3x+12) - (5x-6) = 3x+12-5x+6 = \boxed{-2x+18}$$

$$\textcircled{3} (-4x^2+10) - (6x^2-9) = -4x^2+10-6x^2+9 = \boxed{-10x^2+19}$$

$$\textcircled{4} (2x^2+3x+8) - (x^2+5x-1) = 2x^2+3x+8-x^2-5x+1 = \boxed{x^2-2x+9}$$

$$\textcircled{5} (-x^2+9x-2) - (9x^2-4x+4) = -x^2+9x-2-9x^2+4x-4 \\ = \boxed{-10x^2+13x-6}$$

$$\textcircled{6} (3x^2+7x+1) - (8+5x+x^2) = 3x^2+7x+1-8-5x-x^2 \\ = \boxed{2x^2+2x-7}$$

$$\textcircled{7} (4x^3+6x^2-8x) - (x^3-2x^2+12x) = 4x^3+6x^2-8x-x^3+2x^2-12x \\ = \boxed{3x^3+8x^2-20x}$$

$$\textcircled{8} (x^3+2x^2+5x) - (3x^2-x-7) = x^3+2x^2+5x-3x^2+x+7 \\ = \boxed{x^3-x^2+6x+7}$$

$$\textcircled{9} (x^4+8x^2-1) - (x^2-3x^3+x^4) = x^4+8x^2-1-x^2+3x^3-x^4 \\ = \boxed{3x^3+7x^2-1}$$

$$\textcircled{10} (5x^4-2x^2) - (3x-2x^2-4x^3+6x^4) = 5x^4-2x^2-3x+2x^2+4x^3-6x^4 \\ = \boxed{-x^4+4x^3-3}$$

$$\textcircled{11} (3x^2+7xy-2y^2) - (x^2-6xy+2y^2) = 3x^2+7xy-2y^2-x^2+6xy-2y^2 \\ = \boxed{2x^2+13xy-4y^2}$$

$$\textcircled{12} (-x^2-9xy+5y^2) - (4x^2-2xy-y^2) = -x^2-9xy+5y^2-4x^2+2xy+y^2 \\ = \boxed{-5x^2-7xy+6y^2}$$

$$\textcircled{13} (4x^2y-3xy^2) - (3x^2y-8xy^2) = 4x^2y-3xy^2-3x^2y+8xy^2 \\ = \boxed{x^2y+5xy^2}$$

$$\textcircled{T} \frac{6x+9}{x-1} \\ \underline{\hspace{1.5cm}} \\ 7x+8$$

$$\textcircled{I} \frac{3x-4}{5x-7} \\ \underline{\hspace{1.5cm}} \\ 8x-11$$

$$\textcircled{O} \frac{8x^2+2x+1}{x^2-4x+7} \\ \underline{\hspace{1.5cm}} \\ 9x^2-2x+8$$

$$\textcircled{S} \frac{-5x^2-5x+3}{6x^2-x} \\ \underline{\hspace{1.5cm}}$$

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

$$\textcircled{N} (7x+3x+9) + (2x^2+5x-2) = \boxed{9x^2+8x+7}$$

$$\textcircled{U} (-3x^2+x-7) + (8x^2-4x-4) = \boxed{5x^2-3x-11}$$

$$\textcircled{I} (6x^3+2x^2-3x) + (3x^3-10x^2-x) = \boxed{9x^3-8x^2-4x}$$

$$\textcircled{T} (-4x^3+6x+1) + (5x^2-x-12) = \boxed{-4x^3+5x^2+5x-11}$$

$$\textcircled{O} (9x^3-x^2+8) + (-9x^3+2x^2+3x) = \boxed{x^2+3x+8}$$

$$\textcircled{S} (2x^4+5x^2-11) + (-6x^4-7x^2+1) = \boxed{-4x^4-2x^2-10}$$

$$\textcircled{N} (-4x^4+3x^3-7x^2-x) + (-9x^3+7x^2-5x-1) = \boxed{-4x^4-6x^3-6x-1}$$

$$\textcircled{J} (4x^2+3xy-y^2) + (x^2-8xy-2y^2) = \boxed{5x^2-5xy-3y^2}$$

$$\textcircled{A} (2x^2y-xy^2) + (6x^2y+7xy^2) = \boxed{8x^2y+6xy^2}$$

$$\textcircled{T} (x^3y+3x^2y^2+2xy^3) + (2x^3y-9x^2y^2-xy^3)$$

$$= \boxed{3x^3y+6x^2y^2+xy^3}$$