

Why Do Girls Like Guys Who Wear Shirts With Eight Buttons?

Solve each equation below and find your solution at the bottom of the page. Write the letter of that equation above the solution.

(E) $4(5n - 7) = 10n + 2$

(N) $9(x + 3) = 4x - 3$

(A) $2(12 - 8x) = x - 11x$

(H) $3t + 8(2t - 6) = 2 + 14t$

(E) $2v + 18 = 16 - 4(v + 7)$

(I) $4x - (9 - 3x) = 8x - 1$

(T) $12(3 + y) = 5(2y + 8)$

(A) $-7(1 - 4m) = 13(2m - 3)$

(Y) $9(11 - k) = 3(3k - 9)$

(S) $4x + 5(7x - 3) = 9(x - 5)$

(T) $2(6d + 3) = 18 - 3(16 - 3d)$

(F) $8(4u - 1) - 12u = 11(2u - 6)$

(C) $-5 - (15y - 1) = 2(7y - 16) - y$



2	10	3	7	9	29	4	-1	1	-8	-6	-16	-12	-5

What Do They Call Bowling in Hawaii?

Solve each problem below. Then find your solution in the answer column and notice the letter next to it. Write this letter in each box that contains the number of that problem. Aloha-ha-ha!

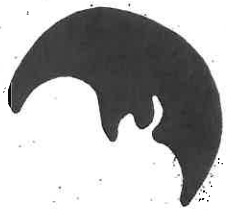
- ① The second of two numbers is 4 times the first. Their sum is 50. Find the numbers.
- ② The larger of two numbers is 12 more than the smaller. Their sum is 84. Find the numbers.
- ③ The sum of two numbers is 45. The first is 9 less than the second. Find the numbers.
- ④ The second of two numbers is 5 more than twice the first. Their sum is 80. Find the numbers.
- ⑤ The larger of two numbers is 1 less than 3 times the smaller. Their sum is 63. Find the numbers.
- ⑥ Find two numbers whose sum is 92, if the first is 4 more than 7 times the second.
- ⑦ The sum of two numbers is 172. The first is 8 less than 5 times the second. Find the *first* number.
- ⑧ Together, a necklace and a bracelet cost \$192. Find the price of each if the necklace costs 3 times as much as the bracelet.
- ⑨ Grandpa's age is 6 years less than 6 times Junior's age. The sum of their ages is 78. Find each of their ages.
- ⑩ The first of two films lasted 3 minutes less than twice as long as the second. Together the two films lasted 132 minutes. How long was the *first* film?

- Ⓐ 80, 12
- Ⓞ 25, 55
- Ⓛ 87 min
- Ⓖ 81, 11
- Ⓕ \$40, \$152
- Ⓓ 30, 50
- Ⓣ 36, 48
- Ⓝ 12, 66
- Ⓜ 16, 47
- Ⓢ 18, 27
- Ⓑ 84 min
- Ⓔ 10, 40
- Ⓜ 139
- Ⓡ \$48, \$144
- Ⓟ 19, 28
- ⓗ 142



8	4	10	10	5	9	6	5	9	2	7	1	5	3	10	1	3
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What Did They Call the Bug That the Astronauts Brought Back From the Moon?



Solve each problem below. Find your solution at the bottom of the page and cross out the letter above it. When you finish, the answer to the title question will remain.

- ① Andy is twice as old as Kate. In 6 years, their ages will total 60. How old is each now?
Kate _____, Andy _____
- ② Mrs. Wang is 23 years older than her daughter. In 5 years, their ages will total 63. How old are they now?
daughter _____, Mrs. Wang _____
- ③ Matthew is 3 times as old as Jenny. In 7 years, he will be twice as old as she will be then. How old is each now?
Jenny _____, Matthew _____
- ④ Juan is 8 years older than his sister. In 3 years, he will be twice as old as she will be then. How old are they now?
sister _____, Juan _____

- ⑤ Melissa is 24 years younger than Joyce. In 2 years, Joyce will be 3 times as old as Melissa will be then. How old are they now?
Joyce _____, Melissa _____
- ⑥ Tom is 4 years older than Jerry. Nine years ago, Tom was 5 times as old as Jerry was then. How old is each now?
Jerry _____, Tom _____
- ⑦ Kathy is 6 years younger than Bill. Twelve years ago, Bill was twice as old as Kathy was then. How old are they now?
Bill _____, Kathy _____
- ⑧ Dr. Garcia is twice as old as his son. Twenty years ago, he was 4 times as old as his son was then. How old are they now?
son _____, Dr. Garcia _____

B	A	F	L	E	Y	U	G	N	A	T	O	I	T	C	H	K
5, 13	7, 15	30, 60	14, 28	16, 32	10, 14	33, 66	7, 21	26, 20	9, 32	35, 11	24, 18	8, 24	34, 10	8, 12	15, 38	12, 16

What Happens to a Dog Who Eats Table Scraps?

Simplify each expression below. Find your answer in the corresponding answer column and notice the letter next to it. Write this letter in the box that contains the number of that exercise.



- 1 $(x^3)^2$
- 2 $(x^4)^3$
- 3 $(2x^2)^3$
- 4 $(-4x^3)^2$
- 5 $(-3x^4)^3$
- 6 $(8x^5)^2$
- 7 $(-2x^3)^5$
- 8 $(4x)^3$
- 9 $(-9x)^2$
- 10 $x(2x^2)^3$
- 11 $-3x(2x)^2$
- 12 $x^2(5x^3)^3$
- 13 $-4x^2(-4x)^2$

- L $81x^2$
- T $125x^{11}$
- S $-32x^{15}$
- G $8x^6$
- E $-64x^4$
- H x^6
- N $-12x^3$
- S $64x^{10}$
- E x^{12}
- P $64x^3$
- E $16x^6$
- I $8x^7$
- T $-27x^{12}$

- 14 $(4a^2b^3)^2$
- 15 $(2a^4b)^3$
- 16 $(-5a^3b^3)^2$
- 17 $(ab^5)^3$
- 18 $(-a^2b^2)^3$
- 19 $(-8ab^4)^2$
- 20 $2a(3a^2b)^2$
- 21 $-b(5a^3b)^3$
- 22 $3ab(2ab^2)^4$
- 23 $(ab^3)^2(a^2b)^3$
- 24 $(-2ab^2)^2(-ab)^3$
- 25 $(3ab^2)(3ab)^2$
- 26 $(-a^2b)^4(-a^2b^4)$

- H $-a^6b^6$
- E $-a^{10}b^8$
- R $16a^4b^6$
- N a^8b^9
- I $25a^6b^6$
- S $18a^5b^2$
- U $27a^3b^4$
- N a^3b^{15}
- I $64a^2b^8$
- O $48a^5b^9$
- S $8a^{12}b^3$
- G $-4a^5b^7$
- T $-125a^9b^4$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
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Why Is a Stick of Gum Like a Sneeze?

For each exercise, multiply the two polynomials. Find your answer in the set of answers under the exercise. Cross out the letter above your answer. When you finish, the answer to the title question will remain!

- ① $(x + 3)(x + 5)$
- ② $(x + 2)(x + 9)$
- ③ $(x - 8)(x + 1)$
- ④ $(x - 3)(x - 6)$
- ⑤ $(2x + 9)(x - 2)$
- ⑥ $(3x + 1)(2x + 4)$

- ⑦ $(4a - 7)(3a - 2)$
- ⑧ $(2a + 5)(2a - 5)$
- ⑨ $(6a - 1)(2a + 4)$
- ⑩ $(a + 2b)(4a + b)$
- ⑪ $(5a + 3b)(a - 4b)$
- ⑫ $(3a - 8b)(2a - b)$

- ⑬ $(n + 2)(n^2 + 5n - 3)$
- ⑭ $(3n - 1)(2n^2 + 4n + 4)$
- ⑮ $(2n + 3)(6n^2 - 2n + 1)$
- ⑯ $(4n - 5)(n^2 - 7n - 2)$
- ⑰ $(3n - 4)(4n^2 + 2n + 3)$
- ⑱ $(n + 8)(6n^2 - n - 4)$

B	E	S	I	A	U	T	N	T	I	S	E	R	A	N	O	T	C	R	I	H	E	A	N	W	D
$x^2 - 7x - 8$	$x^2 + 8x + 15$	$6x^2 + 14x + 4$	$6x^2 + 7x + 4$	$x^2 - 9x + 18$	$x^2 + 11x + 18$	$x^2 - 13x + 18$	$2x^2 + 5x - 18$	$4a^2 + 9ab + 2b^2$	$6a^2 - 19ab + 8b^2$	$5a^2 - 11ab - 12b^2$	$12a^2 + 22a - 4$	$4a^2 - 25$	$4a^2 + 4ab + 3b^2$	$5a^2 - 17ab - 12b^2$	$12a^2 - 29a + 14$	$6n^3 + 47n^2 - 12n - 32$	$6n^3 + 44n^2 - 9n - 32$	$4n^3 - 33n^2 + 27n + 10$	$6n^3 + 10n^2 + 8n - 4$	$n^3 + 6n^2 + 9n - 6$	$12n^3 - 9n^2 - 2n - 12$	$12n^3 - 10n^2 + n - 12$	$n^3 + 7n^2 + 7n - 6$	$4n^3 - 30n^2 + 21n + 10$	$12n^3 + 14n^2 - 4n + 3$

What Did the Girl Melon Say When the Boy Melon Proposed Marriage?

Circle the number-letter pair next to each TRUE statement below. Write the letter in the matching numbered box at the bottom of the page. (Hint: You should circle eight number-letter pairs in each column.)

- | | |
|------|--------------------------------------|
| 3-S | $(x + 5)(x + 2) = x^2 + 7x + 10$ |
| 9-A | $(t - 7)(t - 1) = t^2 - 8t + 7$ |
| 6-L | $(n - 9)(n - 3) = n^2 - 6n + 27$ |
| 16-E | $(u - 3)(u + 6) = u^2 + 3u - 18$ |
| 6-T | $(a + 9)(a - 8) = a^2 + a - 72$ |
| 7-R | $(x + 4)(x - 10) = x^2 - 14x - 40$ |
| 14-O | $(3m + 1)(m + 5) = 3m^2 + 16m + 5$ |
| 5-N | $(8d + 3)(2d + 1) = 16d^2 + 14d + 4$ |
| 7-I | $(2k - 4)(3k - 2) = 6k^2 - 16k + 8$ |
| 12-E | $(x + 8)(2x - 6) = 2x^2 + 10x - 48$ |
| 2-A | $(4n - 2)(n + 5) = 4n^2 + 22n - 10$ |
| 1-Y | $(3v - 2)(5v + 4) = 15v^2 + 2v - 8$ |
| 11-I | $(2y + 9)(3y - 1) = 5y^2 + 25y - 9$ |

- | | |
|------|--|
| 5-U | $(2w - 6)(5w + 4) = 10w^2 - 22w - 24$ |
| 8-D | $(8x - 1)(4x + 3) = 32x^2 + 24x - 3$ |
| 11-T | $(3x + 2)(3x - 2) = 9x^2 - 4$ |
| 4-B | $(a + b)(2a + b) = 2a^2 + 3ab + b^2$ |
| 15-A | $(2c + 6d)(c - d) = 2c^2 + 8cd - 6d^2$ |
| 2-E | $(4x - y)(3x + 2y) = 12x^2 + 5xy - 2y^2$ |
| 8-C | $(2u - 5v)(2u - 8v) = 4u^2 - 26uv + 40v^2$ |
| 10-P | $(9a + b)(2a + 5b) = 18a^2 + 47ab - 5b^2$ |
| 13-R | $(2a - 2b)(a + 10b) = 2a^2 - 8ab - 20b^2$ |
| 15-P | $(7m + n)(m - 3n) = 7m^2 - 20mn - 3n^2$ |
| 10-N | $(x^2 - 4)(x^2 - 9) = x^4 - 13x^2 + 36$ |
| 3-D | $(k^2 - 6)(k^2 + 3) = k^4 - 9k^2 - 18$ |
| 13-L | $(x^2 + 2y)(x^2 - 2y) = x^4 - 4y^2$ |

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Why Did King Kong Eat a Truck?

Circle the appropriate number-letter pairs in each column. Write the letter in the matching numbered box at the bottom of the page. (Hint: You should circle 11 number-letter pairs in each column.)

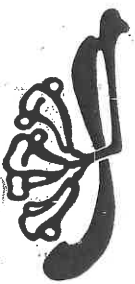
Circle the number-letter of each TRUE STATEMENT:

- 8-S $(x + 2)^2 = x^2 + 4x + 4$
- 13-E $(a - 5)^2 = a^2 - 10a + 25$
- 10-A $(u + 8)^2 = u^2 + 16u + 64$
- 2-H $(m - 4)^2 = m^2 - 16m + 16$
- 18-G $(3x + 1)^2 = 9x^2 + 6x + 1$
- 14-D $(5t - 2)^2 = 25t^2 - 20t + 4$
- 4-P $(2b + 3)^2 = 4b^2 + 12b + 6$
- 20-A $(2n + 7)^2 = 4n^2 + 28n + 49$
- 2-E $(10d - 4)^2 = 100d^2 - 80d + 16$
- 5-K $(8x - 1)^2 = 16x^2 - 16x + 1$
- 7-R $(4w + 5)^2 = 16w^2 + 20w + 25$
- 4-L $(x^2 - 3)^2 = x^4 - 6x^2 + 9$
- 11-T $(k^2 + 9)^2 = k^4 - 18k^2 + 81$
- 5-W $(2a + b)^2 = 4a^2 + 4ab + b^2$
- 15-A $(3u - 2v)^2 = 9u^2 - 12uv + 4v^2$
- 6-E $(8a + b)^2 = 64a^2 + 8ab + b^2$
- 1-H $(c^2 - 6d^2)^2 = c^4 - 12c^2d^2 + 36d^4$
- 21-I $(2xy - 5)^2 = 4x^2y^2 - 20xy + 10$

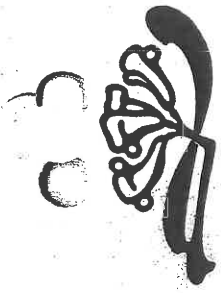
Circle the number-letter of each TRINOMIAL SQUARE:

- 6-A $n^2 + 6n + 9$
- 11-N $x^2 - 14x + 49$
- 3-R $a^2 + 2a + 4$
- 7-Y $c^2 + 2c + 1$
- 12-B $k^2 - 5k + 25$
- 21-C $x^2 - 12x + 36$
- 3-A $4t^2 + 12t + 9$
- 12-T $81x^2 - 18x + 1$
- 17-L $4m^2 + 8m + 16$
- 16-B $9w^2 - 24w + 16$
- 9-F $25t^2 - 45t + 9$
- 22-D $4x^4 + 8x^2 + 1$
- 9-W $a^2 + 2ab + b^2$
- 22-K $4m^2 + 20mn + 25n^2$
- 19-L $9a^2 - 27ab + 9b^2$
- 17-I $100u^2 - 60uv + 9v^2$
- 8-E $100a^2 + 20ab + 4b^2$
- 19-M $9x^4 + 6x^2y^2 + y^4$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
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Why Does Gyro Never, Ever Bet on Even Numbers?



Factor completely each polynomial below. Find your answer and notice the two letters next to it. Write these letters in the two boxes at the bottom of the page that contain the number of that exercise.

① $3x^2 - 75$

② $5x^2 + 30x + 45$

③ $x^3 - 49x$

④ $2x^2 - 24x + 72$

LO $5(x - 4)^2$

EL $2(x - 12)^2$

HE $3(x + 5)(x - 5)$

EA $x(x + 8)(x - 8)$

SF $5(x + 3)^2$

NT $2(x - 6)^2$

CH $3(x + 2)(x - 2)$

ST $x(x + 7)(x - 7)$

⑤ $2k^3 - 8k$

⑥ $54k^2 - 24$

⑦ $5k^3 + 100k^2 + 500k$

⑧ $12k^2 - 36k + 27$

HI $5k(k + 10)^2$

EN $3(k - 2)^2$

SO $2k(k + 4)(k - 4)$

DS $6(3k + 2)(3k - 2)$

HE $2k(k + 2)(k - 2)$

LS $6(3k + 1)(3k - 1)$

OR $3(2k - 3)^2$

TE $5k(k + 8)^2$

⑨ $7a^3b - 7ab^3$

⑩ $32a^2b^2 + 16ab^2 + 2b^2$

⑪ $4a^3b - 40a^2b^2 + 100ab^3$

⑫ $4a^4b^3 - a^2b$

MI $7ab(a + 2b)^2$

LA $4ab(a - 3b)^2$

OD $a^2b(2ab + 1)(2ab - 1)$

WA $7ab(a + b)(a - b)$

AT $2b^2(2a + 4)^2$

AV $4ab(a - 5b)^2$

MA $a^2b(ab + 2)(ab - 2)$

IN $2b^2(4a + 1)^2$

5	5	9	9	4	4	3	3	1	1	12	12	6	6	10	10	7	7	2	2	11	11	8	8
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Did You Hear About...

$3(t-2)$				
STARTED				
$(t+6)(t-1)$				
WHO				
$(t+6)(t-2)$				
RED				
$(t+5)(t-2)$				
THE				
$(t-9)(t+8)$				
BECAUSE				
$(t-4)(t+2)$				
JOINED				
$(t-4)(t+5)$				
ARMY				
$(t-10)(t+2)$				
CROSS				
$(t+7)(t-3)$				
CAT				
$(t+4)(t-3)$				
AFTER				
$(t-11)(t+1)$				
THE				

$(x-9)(x-1)$				
WANTED				
$(x+9)(x-4y)$				
KIT				
$(x-18y)(x+2y)$				
BAND				
$(x-12y)(x+3y)$				
AID				
$(x+5y)(x-3y)$				
A				
$(x+8)(x-3)$				
TO				
$(x+6)(x-4)$				
HELP				
$(x+6)(x-3)$				
IT				
$(x-25y)(x+2y)$				
LION				
$(x-12)(x+2)$				
BE				
$(x-10y)(x+5y)$				
FIRST				

A	B	C	D
E	F	G	H
I	J	K	L
M	N	O	P
			?

Factor each trinomial below. Find the factored form in the answer column nearest the exercise, and notice the word beneath it. Write this word in the box containing the letter of that exercise. Keep working and you will hear about a kitty cat.

- | | |
|----------------------|-------------------------|
| (A) $t^2 + 3t - 10$ | (I) $x^2 + 3x - 18$ |
| (B) $t^2 + 4t - 21$ | (J) $x^2 - 17x - 18$ |
| (C) $t^2 + 5t - 6$ | (K) $x^2 + 5x - 24$ |
| (D) $t^2 - 2t - 8$ | (L) $x^2 - 10x - 24$ |
| (E) $t^2 - 10t - 11$ | (M) $x^2 + 2xy - 15y^2$ |
| (F) $t^2 + 4t - 12$ | (N) $x^2 - 5xy - 50y^2$ |
| (G) $t^2 - 8t - 20$ | (O) $x^2 - 9xy - 36y^2$ |
| (H) $t^2 - t - 72$ | (P) $x^2 + 5xy - 36y^2$ |

What Happened When the Boarding House Blew Up?

Factor each trinomial below. Find one of the factors in each column of binomials. Notice the letter next to one factor and the number next to the other. Write the letter in the box at the bottom of the page that contains the matching number.

- | | | |
|---------------------|--------------|--------------|
| ① $3x^2 + 7x + 2$ | ⑤ $(5u + 3)$ | ① $(3u - 2)$ |
| ② $2x^2 + 5x + 3$ | ③ $(x - 1)$ | ② $(x - 5)$ |
| ③ $3x^2 - 16x + 5$ | ⑧ $(3x + 1)$ | ③ $(8u - 1)$ |
| ④ $7x^2 - 9x + 2$ | ⑭ $(3u - 1)$ | ④ $(7x - 2)$ |
| ⑤ $6u^2 + 5u + 1$ | ⑥ $(2u + 3)$ | ⑤ $(5u + 1)$ |
| ⑥ $8u^2 - 9u + 1$ | ⑮ $(x + 1)$ | ⑥ $(x + 2)$ |
| ⑦ $10u^2 + 17u + 3$ | ⑨ $(5u + 6)$ | ⑦ $(7x + 2)$ |
| ⑧ $9u^2 - 9u + 2$ | ⑦ $(2u + 1)$ | ⑧ $(2x + 3)$ |
| ⑨ $5u^2 + 11u + 6$ | ⑪ $(3x - 1)$ | ⑨ $(u + 1)$ |
| | ⑰ $(u - 1)$ | ⑩ $(3u + 1)$ |

- | | | |
|--------------------|--------------|--------------|
| ⑩ $3n^2 + 2n - 1$ | ⑫ $(3t - 1)$ | ① $(n + 3)$ |
| ⑪ $5n^2 - 4n - 1$ | ⑤ $(n - 1)$ | ② $(t - 1)$ |
| ⑫ $2n^2 + 5n - 3$ | ④ $(3t + 1)$ | ③ $(2t + 1)$ |
| ⑬ $7n^2 - 13n - 2$ | ⑩ $(n - 2)$ | ④ $(n + 1)$ |
| ⑭ $3t^2 + 14t - 5$ | ⑬ $(t + 1)$ | ⑤ $(t + 5)$ |
| ⑮ $4t^2 - 11t + 7$ | ② $(3n - 1)$ | ⑥ $(5n + 1)$ |
| ⑯ $6t^2 + 5t - 1$ | ⑯ $(2n - 1)$ | ⑦ $(t - 7)$ |
| ⑰ $3t^2 - 20t - 7$ | ④ $(3t - 7)$ | ⑧ $(7n + 1)$ |
| | ① $(4t - 7)$ | ⑨ $(6t - 1)$ |

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
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OBJECTIVE 3-a: To factor trinomials of the form $ax^2 + bx + c$, where a is a positive integer greater than 1.

How Can Fishermen Save Gas?

Factor each polynomial below. Find one of the factors in each column of binomials. Notice the letter next to one factor and the number next to the other. Write the letter in the box at the bottom of the page that contains the matching number.

① $4n^2 - 49$

② $n^2 + 8n + 12$

③ $n^2 - 9n + 20$

④ $n^2 + 16n + 64$

⑤ $n^2 + 2n - 15$

⑥ $3n^2 - 8n + 5$

③ $(n + 1)$

⑪ $(n + 2)$

② $(n + 8)$

⑨ $(2n + 7)$

④ $(n + 5)$

⑱ $(n - 1)$

⑭ $(n - 4)$

① $(n - 3)$

⑧ $(2n - 7)$

④ $(n - 5)$

⑤ $(3n - 5)$

⑥ $(n + 8)$

⑦ $(3n - 1)$

② $(n + 6)$

⑦ $a^2 + 4a - 21$

⑧ $5a^2 + 9a - 2$

⑨ $2a^2 + 11a + 15$

⑩ $1 - 9a^4$

⑪ $a^2 - 11a + 30$

⑫ $10a^2 - 3a - 1$

① $(a - 5)$

⑬ $(a + 7)$

⑤ $(5a + 1)$

⑦ $(a + 2)$

⑮ $(a - 1)$

⑧ $(1 - 3a^2)$

⑯ $(2a + 5)$

③ $(2a + 1)$

④ $(a - 6)$

⑤ $(a - 3)$

⑥ $(a + 3)$

⑦ $(5a - 1)$

⑧ $(2a - 1)$

⑨ $(1 + 3a^2)$

⑬ $8u^2 + 19u + 6$

⑭ $25u^2 - 20u + 4$

⑮ $3u^2 - 11u - 14$

⑯ $u^2 - 4u - 21$

⑰ $6u^2 + 17u - 10$

⑱ $2u^2 + 5u - 18$

⑩ $(u + 3)$

⑫ $(2u + 9)$

⑬ $(u - 3)$

③ $(5u - 2)$

⑥ $(3u - 14)$

⑮ $(u + 2)$

⑰ $(3u + 10)$

④ $(u + 1)$

⑤ $(2u + 1)$

⑥ $(8u + 3)$

⑦ $(2u - 1)$

⑧ $(u - 7)$

⑨ $(u - 2)$

⑩ $(5u - 2)$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----

OBJECTIVE 3-p: To factor polynomials using the methods on preceding pages (review).

Old Lawyers Never Die, They Just

14 12 5 4 1 10 4 7 9 2 13 13 4 2 14

Old Skiers Never Die, They Just

8 12 3 12 6 11 10 7 14 14

YOU MAY HAVE HEARD THAT OLD MATH TEACHERS NEVER DIE, THEY JUST REDUCE TO LOWEST TERMS. TO FIND OUT WHAT HAPPENS TO OLD LAWYERS AND SKIERS, FOLLOW THESE DIRECTIONS:

Factor completely each polynomial below. Find your answer in the appropriate answer column and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

Answers for 1-7:

- (C) $(3x + 5)(x - 2)$
- (I) $5x(2x - 7)(x + 1)$
- (T) $2(x + 2)(x + 9)$
- (Y) $a(x + 6)(x + 2)$
- (S) $x^2(x + 10)(x - 2)$
- (D) $2x(3x + 7)(3x - 7)$
- (M) $x^2(x + 4)(x - 5)$
- (B) $2(x + 3)(x + 6)$
- (A) $5x(x - 4)(x + 2)$
- (F) $2x(9x - 7)(x + 7)$
- (W) $(3x + 10)(x + 1)$
- (K) $5x(2x - 1)(x + 7)$
- (E) $a(x - 3)(x - 4)$

(1) $2x^2 + 22x + 36$

(2) $5x^3 - 10x^2 - 40x$

(3) $18x^3 - 98x$

(4) $ax^2 - 7ax + 12a$

(5) $x^4 + 8x^3 - 20x^2$

(6) $3x^2 + 13x + 10$

(7) $10x^3 - 25x^2 - 35x$

(8) $12u^2 - 28u - 24$

(9) $u^4 - 3u^2 - 4$

(10) $15u^4 + 2u^3 - u^2$

(11) $2u^2v - 18uv + 28v$

(12) $12u^3 + 36u^2 + 27u$

(13) $40u^2 + 15u - 55$

(14) $u^4 - 10u^2 + 9$

Answers for 8-14:

(H) $u^2(5u - 1)(3u + 1)$

(V) $3u(4u + 3)(u + 3)$

(L) $(u + 1)(u - 1)(u + 3)(u - 3)$

(N) $2v(u - 7)(u - 2)$

(K) $4(3u + 6)(u - 1)$

(B) $(u^2 + 9)(u + 1)(u - 2)$

(G) $4(3u + 2)(u - 3)$

(M) $u^2(15u + 1)(u - 1)$

(P) $5(8u + 11)(u - 1)$

(U) $2v(u + 14)(u + 1)$

(R) $(u^2 + 1)(u + 2)(u - 2)$

(F) $5(4u + 11)(2u + 1)$

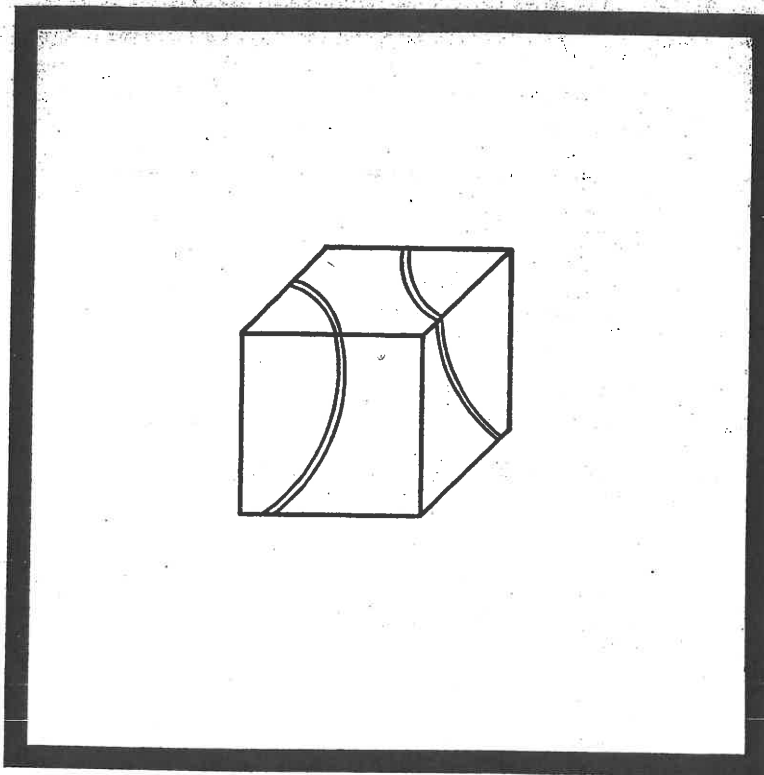
(O) $3u(2u + 3)^2$



What Is the Title of This Picture?

Solve each equation below. Find the solution set in the answer list 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 title of the picture.

- ① $a^2 + 7a + 10 = 0$
- ② $n^2 - 8n + 12 = 0$
- ③ $y^2 - 49 = 0$
- ④ $x^2 + 5x - 6 = 0$
- ⑤ $u^2 - 7u - 18 = 0$
- ⑥ $m^2 - 5m = 0$
- ⑦ $2t^2 + 5t - 3 = 0$
- ⑧ $3w^2 - 8w + 4 = 0$
- ⑨ $2x^2 - 3x - 5 = 0$
- ⑩ $5v^2 + 29v + 20 = 0$
- ⑪ $6n^2 - 19n + 15 = 0$
- ⑫ $2k^2 + 7k = 0$
- ⑬ $3b^2 + b - 10 = 0$
- ⑭ $4y^2 - 25 = 0$



CODED TITLE:

 14 12 13 13 1 6 9 11 5 5
 (_____)
 10 11 2 14 3 8 4 8 12 7 12 2 14

Ⓝ $\left\{\frac{5}{3}, -2\right\}$	ⓓ $\left\{\frac{3}{2}, \frac{5}{2}\right\}$	Ⓟ $\left\{\frac{5}{2}, -1\right\}$	Ⓛ $\{-2, 9\}$
Ⓡ $\left\{\frac{2}{3}, 2\right\}$	Ⓢ $\{-2, -5\}$	Ⓣ $\left\{0, -\frac{7}{2}\right\}$	ⓗ $\left\{\frac{3}{5}, -1\right\}$
Ⓢ $\{0, 5\}$	Ⓣ $\left\{\frac{5}{2}, -\frac{5}{2}\right\}$	Ⓨ $\{-6, 1\}$	Ⓒ $\{2, 6\}$
Ⓞ $\{7, -7\}$	ⓕ $\left\{-\frac{4}{5}, -5\right\}$	Ⓜ $\left\{\frac{1}{2}, -3\right\}$	Ⓐ $\left\{\frac{3}{2}, \frac{5}{3}\right\}$

◆ BOOKS NEVER WRITTEN ◆

Everybody Needs Insurance by

9 3 12 1 8 11 6 2 12 10

Rock 'n Roll Your Baby by

5 10 12 7 2 11 6 10

50 Years in the Navy by

8 8 12 10 4 4

ABOVE ARE THE TITLES OF THREE "BOOKS NEVER WRITTEN." TO DECODE THE NAMES OF THEIR AUTHORS:

Simplify each expression below. Find your answer and notice the letter next to it. Each time the exercise number appears in the code, write this letter above it.

① $\frac{2x^2 - 18}{4x + 12}$

⑤ $\frac{-x^2 + 8x - 16}{x^3 - 4x^2}$

⑨ $\frac{4a^3b^4(a^2 + a - 42)}{28a^4b^4(6 - a)}$

② $\frac{3x^2 - 24x + 36}{2x^2 - x - 6}$

⑥ $\frac{49x - x^3}{7 - 6x - x^2}$

⑩ $\frac{a^4 - 8a^3b}{a^3 - 64ab^2}$

③ $\frac{5x^2 - 25x}{3x^3 - 75x}$

⑦ $\frac{a^2 + 11ab + 18b^2}{a^2b + 9ab^2}$

⑪ $\frac{4a^2 + 8ab - 12b^2}{6a^2 - 12ab + 6b^2}$

④ $\frac{x^2 + 5x - 24}{3 - x}$

⑧ $\frac{15a^5b(5 - a)}{6a^2b^3(a - 5)}$

⑫ $\frac{10a^3b + 10a^2b}{4a^2b^3 + 2ab^3}$

Answers for exercises 1–6:

Ⓦ $\frac{x - 4}{x - 1}$

Ⓐ $\frac{3(x - 6)}{2x + 3}$

Ⓤ $\frac{5}{3(x + 5)}$

Ⓡ $-(x + 8)$

Ⓣ $\frac{x - 3}{2}$

Ⓜ $\frac{x(x - 7)}{x + 2}$

Ⓒ $\frac{x(x - 7)}{x - 1}$

Ⓛ $-\frac{x - 4}{x^2}$

Answers for exercises 7–12:

Ⓝ $-\frac{a + 7}{7a}$

Ⓝ $\frac{2(a + 3b)}{3(a - b)}$

Ⓟ $\frac{2(a - 3b)}{3(a + b)}$

ⓓ $\frac{a + 2b}{ab}$

Ⓡ $-\frac{5a^3}{2b^2}$

Ⓢ $\frac{5a(a + 1)}{b^2(2a + 1)}$

ⓔ $\frac{a^2}{a + 8b}$

Ⓟ $-\frac{a - 7}{7ab}$

Why Are Ancient Stories Like Feet?

Express each product below in simplest form. Find your answer in the answer column and notice the two letters next to it. Write these letters in the two boxes at the bottom of the page that contain the number of that exercise.

$$\textcircled{1} \frac{a^2 - b^2}{a^4 b} \cdot \frac{ab^2}{3a + 3b}$$

$$\textcircled{2} \frac{4 - a}{5a} \cdot \frac{a^2 + 5a}{a^2 + a - 20}$$

$$\textcircled{3} \frac{a^2 + 5ab + 6b^2}{a^2 - 5ab + 6b^2} \cdot \frac{10a - 30b}{5a + 10b}$$

$$\textcircled{4} \frac{3a^2 b - ab^2}{6a} \cdot \frac{9a^2}{9a^2 - b^2}$$

$$\textcircled{5} \frac{2a^2 - 13a + 15}{8a^2 - 12a} \cdot \frac{6a - 4a^2}{a^2 - 10a + 25}$$

$$\textcircled{6} \frac{-a^3 + ab^2}{a^2} \cdot \frac{a^3 + 7a^2 b}{a^2 + 6ab - 7b^2}$$

$$\textcircled{7} \frac{6a + 24}{2a^2 + 5a - 12} \cdot \frac{4a^2 - 9}{15a^2}$$

$$\textcircled{8} \frac{8a - 40}{40 - 3a - a^2} \cdot \frac{a - 8}{2a^2 - 8a}$$

$$\textcircled{9} \frac{27a^4 b^7}{3a^2 - 6a + 3} \cdot \frac{(a - 1)^3}{9ab^3}$$

$$\textcircled{\text{ES}} 3a^3 b(a - 1)$$

$$\textcircled{\text{OT}} -a(a + b)$$

$$\textcircled{\text{EG}} a^3 b^4(a - 1)$$

$$\textcircled{\text{HL}} \frac{3a^2 b}{2(3a + b)}$$

$$\textcircled{\text{EB}} \frac{b(a - b)}{3a^3}$$

$$\textcircled{\text{TS}} -\frac{4(a - 8)}{4a - 8}$$

$$\textcircled{\text{DS}} -\frac{4(a - 8)}{a(a + 8)(a - 4)}$$

$$\textcircled{\text{TH}} \frac{2(a + 3b)}{a - 2b}$$

$$\textcircled{\text{AR}} \frac{2(2a + 3)}{5a^2}$$

$$\textcircled{\text{EN}} -\frac{1}{5}$$

$$\textcircled{\text{EY}} -\frac{2a - 3}{2(a - 5)}$$

3	3	5	5	7	7	1	1	6	6	4	4	9	9	2	2	8	8
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

What Happens When the Smog Lifts in Los Angeles, California?

Simplify each expression below and find your answer at the bottom of the page. Cross out the letter above each correct answer. When you finish, the answer to the title question will remain.

① $\frac{9x}{x^2 - 25} \cdot \frac{x^2 + 5x}{2x - 4} \cdot \frac{x^2 + 3x - 10}{3x^4}$

② $\frac{x + 4}{2x^2 - 14x} \cdot \frac{x^3 + 4x^2}{3x - 24} \div \frac{x^2 + 8x + 16}{x^2 - 3x - 28}$

③ $\frac{4x^2 - y^2}{x^2y - xy^2} \cdot \frac{x^2 + xy}{8x + 4y} \div \frac{2x^2 - 7xy + 3y^2}{8x^5y}$

④ $\frac{(2x - 5)^3}{3 - x} \div \frac{2x^2 - 3x - 5}{6x^2 + 15x} \cdot \frac{x^2 - 2x - 3}{4x^2 - 25}$

⑤ $\frac{x^4 - y^4}{3x^2y - 3xy^2} \div \frac{x^2 + 2xy + y^2}{9xy^3} \div \frac{4x^2 + 4y^2}{xy^2 + y^3}$

⑥ $(75x^2 - 12) \div \left(\frac{35 - 2x - x^2}{x^2 + 7x} \div \frac{x - 5}{5x^3 + 2x^2} \right)$



A	B	U	S	C	O	L	R	A	Y
$\frac{x(x+4)}{6(x-8)}$	$\frac{3(5x-2)}{x}$	$\frac{2x^3(x+y)}{x-3y}$	$-3x(2x-5)$	$\frac{3y^3(x+y)}{4(x-y)}$	$\frac{3y^4}{4}$	$-3(2x-5)$	$\frac{3(x+5)}{2x^2(x-5)}$	$\frac{x(x+4)}{3(x-7)}$	$\frac{2x^5(x+y)}{(x-y)(x-3y)}$

Why Do Helicopters Get Sick So Often ?



Express each sum below in simplest form. Find your answer and notice the three letters next to it. Write these letters in the three boxes at the bottom of the page that contain the number of that exercise.

① $\frac{7}{x-3} + \frac{4}{x^2-9}$

④ $\frac{m}{m+5} + \frac{10m}{m^2-25}$

⑦ $\frac{3}{a+2} + \frac{8}{a-5}$

② $\frac{x}{x+5} + \frac{7x+10}{x^2+5x}$

⑤ $\frac{2}{m+3} + \frac{9}{m^2+8m+15}$

⑧ $\frac{6}{a^2-4} + \frac{2}{a+2} + \frac{5}{a-2}$

③ $\frac{x-20}{x^2-4x} + \frac{x}{x-4}$

⑥ $\frac{11m}{m^2+3m-28} + \frac{m}{m+7}$

⑨ $\frac{2}{a-3} + \frac{7}{a^2+a-12} + \frac{1}{a+4}$

① COP $\frac{3m}{m+7}$

② NTT $\frac{9a+4}{(a+2)(a-5)}$

③ ICK $\frac{11m+2}{(m+3)(m+5)}$

④ BIR $\frac{m}{m-4}$

⑤ THE $\frac{x+2}{x}$

⑥ HAT $\frac{4a+9}{(a-3)(a+4)}$

⑦ EST $\frac{x+5}{x}$

⑧ DCA $\frac{7x+25}{(x+3)(x-3)}$

⑨ RLY $\frac{7a+12}{(a+2)(a-2)}$

⑩ ERM $\frac{2m+19}{(m+3)(m+5)}$

⑪ TCH $\frac{11a+1}{(a+2)(a-5)}$

⑫ TES $\frac{5a+14}{(a+2)(a-2)}$

⑬ WHI $\frac{m}{m-5}$

⑭ ENT $\frac{x-1}{x}$

⑮ HEL $\frac{2m}{m+5}$

2	2	2	4	4	4	4	8	8	8	8	6	6	6	6	1	1	1	1	7	7	7	3	3	3	9	9	9	5	5	5	5
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Answers A-E:

$\frac{11a-15}{2a-3}$	SCHOOL
$\frac{-29a-21}{5a+2}$	DECIDED
$\frac{8a+17}{a+4}$	BOLD
$\frac{2a+5}{a}$	THE
$\frac{-3(2a-3)}{3a-1}$	WHO
$\frac{3a+20}{a+4}$	DRIVING
$\frac{-27a-16}{5a+2}$	WANTED
$\frac{13a-12}{2a-3}$	TEACHER
$\frac{-a+10}{3a-1}$	FROM

Did You Hear About...

A	B	C	D	E
F	G	H	I	J
				?

Express each sum or difference below in simplest form. Find your answer in the appropriate answer column and notice the word beneath it. Write this word in the box containing the letter of that exercise.

(A) $\frac{5}{a} + 2$

(F) $\frac{3x+1}{x^2+10} + 4$

(B) $\frac{8}{a+4} + 3$

(G) $\frac{5}{x^2-9} + \frac{2}{x-3} + 1$

(C) $4 + \frac{5a}{2a-3}$

(H) $\frac{x}{x+2} + \frac{x}{x-2} - 5$

(D) $\frac{7}{3a-1} - 2$

(I) $\frac{10}{x-3} - \frac{10}{x+5} + 2$

(E) $\frac{a-9}{5a+2} - 6$

(J) $3 - \frac{2x}{x-2} - \frac{5x}{x-5}$

Answers F-J:

$\frac{2x^2+4x+50}{(x-3)(x+5)}$	THE
$\frac{x^2+5x+30}{x^2+10}$	THAT
$\frac{x^2+2x+2}{(x+3)(x-3)}$	GRADE
$\frac{-3(7x-10)}{(x-2)(x-5)}$	CURVE
$\frac{x^2+6x-30}{(x-3)(x+5)}$	HIGHWAY
$\frac{4x^2+3x+41}{x^2+10}$	TO
$\frac{3x^2+x-3}{(x+3)(x-3)}$	CRASH
$\frac{-3x^2+20}{(x+2)(x-2)}$	ON
$\frac{-5x^2+12}{(x+2)(x-2)}$	SOME

What Do They Call People Who Like to Turn the Lights On and Off?

Divide and write your answer as a polynomial or mixed expression. Find your answer below and notice the letter next to it. Write this letter in each box that contains the number of that exercise.

① $\frac{4x^2 - 4x + 3}{2x - 5}$

⑤ $\frac{x^3 - 8}{x - 2}$

② $\frac{2x^2 - 20}{x + 3}$

⑥ $\frac{x^3 + 9x^2 - 80}{x + 4}$

③ $\frac{x^3 + 5x^2 + 4x - 4}{x + 2}$

⑦ $\frac{6a^2 + 5ab - 5b^2}{2a - b}$

④ $\frac{1 - 7x^2 + 6x^3 + 17x}{3x - 2}$

⑧ $\frac{a^3 + 4a^2b + ab^2 - 2b^3}{a + b}$

Ⓓ $x^2 + 2x - 7$

Ⓗ $x^2 + 5x - 20$

Ⓙ $a^2 + 3ab - 2b^2$

Ⓘ $x^2 + 3x - 2$

Ⓢ $x^2 + 2x + 4$

Ⓞ $x^2 + 5x - 18$

Ⓝ $2x - 6 + \frac{7}{x + 3}$

Ⓒ $2x + 3 + \frac{18}{2x - 5}$

Ⓔ $2x^2 - x + 5 + \frac{11}{3x - 2}$

Ⓤ $2x^2 - x - 5 + \frac{4}{3x - 2}$

Ⓐ $3a + 2b - \frac{8b^2}{2a - b}$

Ⓦ $3a + 4b - \frac{b^2}{2a - b}$

Ⓡ $2x - 6 - \frac{2}{x + 3}$

Ⓜ $a^2 + 3ab - b^2 + \frac{5b^3}{a + b}$

5

7

3

8

1

6

6

3

8

8

4

2

5

Why Is a Plowed Field Like Feathered Game ?



Solve each problem below and find the solution at the bottom of the page.
Write the letters next to the problem in the two boxes above the solution.



IS

Nuts to You Shoppe sells cashews for \$15 per kg and pecans for \$10 per kg. How many kilograms of each should be mixed in order to get 20 kg of a mixture worth \$12 per kg?

_____ kg of cashews

_____ kg of pecans

ES

Coffee Grounds, Inc., has two kinds of coffee. Coffee A costs \$9 per kg and Coffee B costs \$6 per kg. How many kilograms of each should be combined to obtain 150 kg of a blend worth \$8 per kg?

_____ kg of Coffee A

_____ kg of Coffee B

RT

C and Y Candy Company mixes candy that costs \$6.00 per kg with candy that costs \$4.50 per kg. How many kilograms of each are needed to make a 3 kg box that costs \$15.00?

_____ kg of \$6.00 candy

_____ kg of \$4.50 candy

IT

Trail Snax Corp. mixes raisins that cost \$5.00 per kg with peanuts that cost \$3.80 a kg. How many kilograms of raisins should be mixed with 10 kg of peanuts to obtain a mixture worth \$4.00 per kg?

_____ kg of raisins

RI

Ground beef sells for \$4.75 per kg and ground pork sells for \$5.50 per kg. How many kilograms of ground pork should be mixed with 8 kg of ground beef to make a mixture that sells for \$5.10 per kg?

_____ kg of pork

PA

Speed Seed Company mixes bluegrass seed that costs \$7.60 per kilogram with ryegrass seed that costs \$6.25 a kg. How many kilograms of bluegrass seed should be mixed with 200 kg of ryegrass seed to make a mixture worth \$7.00 per kg?

_____ kg of bluegrass

DG

A card company mixes two varieties of cards. Embossed cards cost \$.65 each, and regular cards \$.40 each. How many cards of each type should be included in an assortment of 25 cards that costs \$14.00?

_____ embossed cards

_____ regular cards

90			8			1	10		16	100	1.5
60	2	5	12	175	250	2	15	7	9	50	1.5

What Do You Call a Chicken Who Eats Clay?



Solve each problem and find your answer in the rectangle below. Cross out the box containing your answer. When you finish, write the letters from the remaining boxes in the spaces at the bottom of the page.

- 1 Harry can paint a room in 3 hours, and Kerry can paint it in 4 hours. How long will it take if they work together?
- 2 Matthew can build a block wall in 3 days. Andy can build the wall in 5 days. How long will it take if they work together?
- 3 Pump A can fill a tank in 8 hours. Pump B can fill the tank in 6 hours. How long will it take to fill the tank using both pumps?
- 4 To do a job alone, it would take Jennifer 5 hours, Bob 8 hours, and George 10 hours. How long would it take if they all work together?
- 5 Susan and Mary working together can rake a lawn in 2 hours. Susan can do the job alone in 3 hours. How long would it take Mary to rake the lawn alone?
- 6 Pipe A can empty a pool in 8 hours. If Pipe B is also used, the pool can be emptied in 3 hours. How long would it take Pipe B, by itself, to empty the pool?
- 7 Noah can build an ark in 40 days. Together, Noah and his wife can build the ark in 24 days. How long would it take Noah's wife working alone?

CH	AB	AD	IG	R	OP	IC
6 h	58 d	$1\frac{5}{7}$ h	60 d	$2\frac{11}{17}$ h	$1\frac{7}{8}$ d	7 h
H	KL	A	TE	YE	GG	R
$3\frac{3}{7}$ h	$4\frac{7}{8}$ h	$1\frac{2}{3}$ d	$4\frac{4}{5}$ h	75 d	$2\frac{6}{17}$ h	$3\frac{7}{10}$ h

What Happened When Two Fruit Companies Merged?

For each exercise below, find the equation of the line passing through the given points. Circle the two letters next to the correct equation. Then write these letters in the two boxes at the bottom of the page that contain the number of that exercise.

Answers:

① (1, 5) (2, 7)

IS $y = \frac{2}{3}x + 3$

TH $y = \frac{1}{2}x - 4$

② (0, 1) (3, -8)

AP $y = -\frac{3}{2}x + 8$

UI $y = -3x + 5$

③ (2, -3) (4, -2)

ST $y = \frac{1}{2}x - 7$

DE $y = 2x + 3$

④ (2, 5) (4, 2)

CT $y = -3x + 1$

EY $y = 4x + 7$

⑤ (-3, -5) (-1, 3)

LO $y = -\frac{3}{2}x - 4$

IL $y = 2x + 1$

Answers:

⑥ (3, -1) (-6, -4)

HA $y = \frac{1}{2}x - 1$

ER $y = -\frac{3}{4}x + 4$

⑦ (4, 1) (-4, 7)

IS $y = \frac{1}{3}x + \frac{8}{3}$

EL $y = -2x - 1$

⑧ (-1, 2) (3, 4)

PE $y = -x + 2$

EA $y = -\frac{3}{4}x + 2$

⑨ (-1, -4) (2, 0)

SO $y = \frac{4}{3}x - 2$

AR $y = \frac{1}{3}x - 2$

⑩ (3, -1) (-3, 5)

MA $y = \frac{1}{2}x + \frac{5}{2}$

FE $y = \frac{4}{3}x - \frac{8}{3}$

3	3	5	5	8	8	1	1	4	4	7	7	9	9	2	2	10	10	6	6
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	----	---	---

Why Does the President Put Vegetables in His Blender?

Solve each system of equations below by the substitution method. Find the solution in the nearest answer column and notice the two letters next to it. Print these letters in the two boxes at the bottom of the page that contain the number of that exercise.

Answers 1-6:

(4, 2)	LD
(6, -1)	NG
(1, 2)	TR
(4, 8)	HE
(1, -3)	HO
(6, -3)	NT
(5, 3)	FO
(9, 2)	PI
(7, 3)	TH
(5, 2)	IS

Answers 7-12:

$(\frac{1}{2}, -3)$	IN
$(8, -\frac{1}{2})$	VE
$(-\frac{1}{3}, \frac{4}{3})$	RL
(8, 0)	AS
(-3, 4)	TE
$(\frac{1}{2}, 7)$	HI
$(\frac{5}{2}, \frac{4}{3})$	LO
(-1, 4)	RW
$(\frac{5}{2}, -\frac{1}{2})$	PE
(-4, -3)	ED

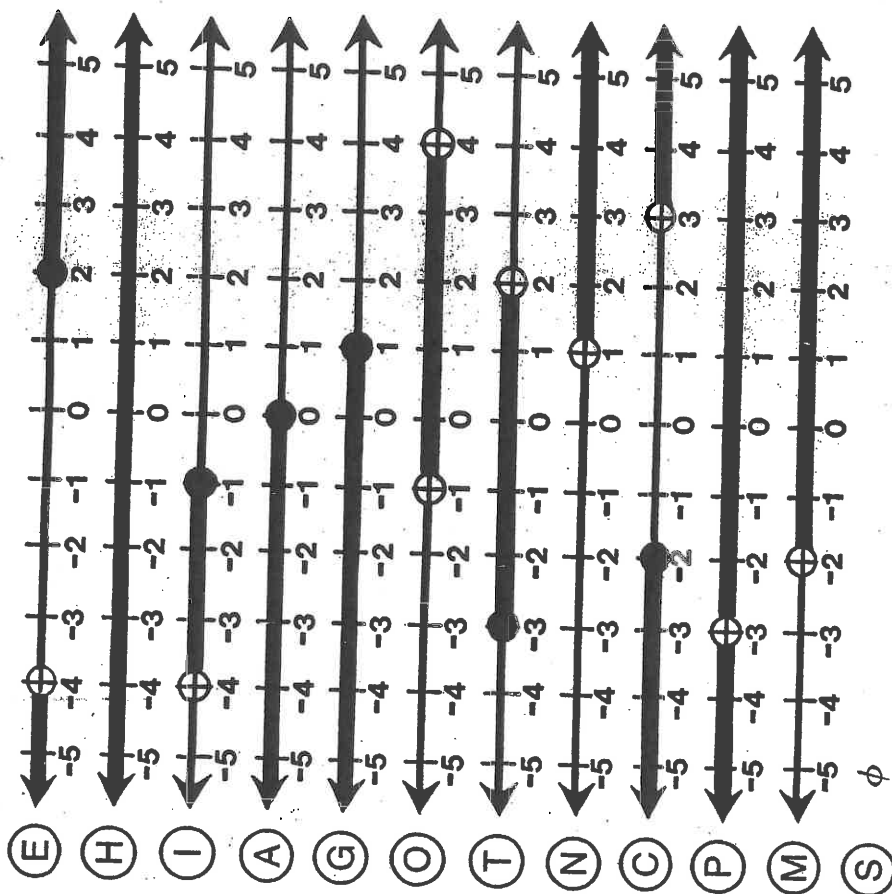
- | | |
|----------------------------------|-----------------------------------|
| ① $y = 2x$
$x + y = 12$ | ⑦ $-2x + 3y = 14$
$x + 2y = 7$ |
| ② $x = 3y - 1$
$x + 2y = 9$ | ⑧ $6x - y = -4$
$2x + 2y = 15$ |
| ③ $y = 2x - 5$
$4x - y = 7$ | ⑨ $x + y = 1$
$2x - y = -2$ |
| ④ $2x - 3y = 12$
$x = 4y + 1$ | ⑩ $5x - 3y = -11$
$x - 2y = 2$ |
| ⑤ $y = -x + 5$
$x - 4y = 10$ | ⑪ $x - y = 3$
$6x + 4y = 13$ |
| ⑥ $x - y = 2$
$4x - 3y = 11$ | ⑫ $2x - y = 16$
$-x + 2y = -8$ |

1	1	2	2	3	3	3	4	4	4	5	5	6	6	6	7	7	8	8	9	9	10	10	11	11	12	12

What Happened to the Glass Blower Who Inhaled?

Find the solution set of each combined inequality below. Then find the corresponding graph in the column of graphs. Write the letter of the graph in each box that contains the number of that exercise.

- 1 $x > -4$ and $x \leq -1$
- 2 $x + 5 > 4$ and $x - 2 < 2$
- 3 $y \leq -2$ or $y > 3$
- 4 $-3t > 12$ or $5t \geq 10$
- 5 $2n + 5 > 1$ and $3n + 4 > 7$
- 6 $-4u + 9 > 1$ and $7u - 13 \leq -6$
- 7 $32 \leq 3x + 20$ or $17 > 1 - 8x$
- 8 $-2k + 8 < 14$ or $3k + 1 < 1$
- 9 $5(w + 4) \geq 5$ and $2(w + 4) < 12$
- 10 $3(6 - y) \leq 6$ and $6 - y \geq 8$
- 11 $3x < 2x - 3$ or $7x > 4x - 9$
- 12 $\frac{x}{2} \leq -2$ or $-\frac{x}{2} \geq 0$



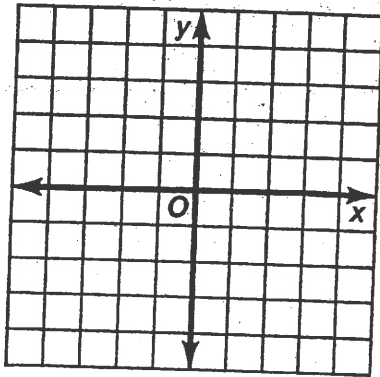
8	4	6	2	9	12	11	12	5	4	1	5	8	1	10	10	9	2	7	12	3	8
---	---	---	---	---	----	----	----	---	---	---	---	---	---	----	----	---	---	---	----	---	---

What Is the Proper Thing to Say When

You Introduce a Hamburger?

Graph each inequality below. Then read the two statements under the coordinate grid for that exercise. Circle the letter of the statement that correctly describes the location of the graph. Print this letter in each box at the bottom of the page that contains the exercise number.

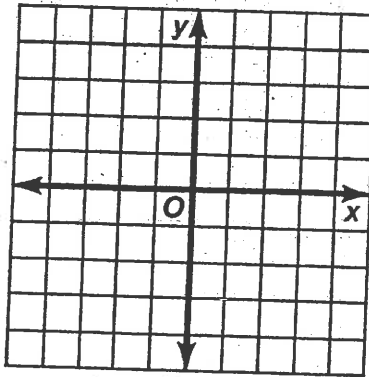
① $y \leq x + 2$



A All four quadrants; includes boundary line.

I Quadrants I, II, IV; includes boundary line.

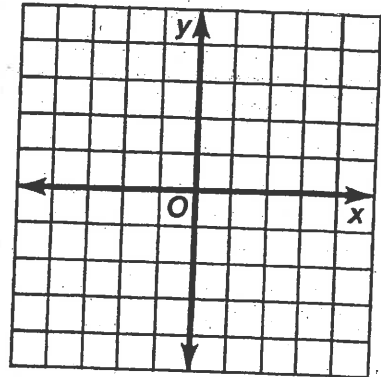
② $y < \frac{2}{3}x - 1$



N Quadrants I, II, IV; excludes boundary line.

Y Quadrants I, III, IV; excludes boundary line.

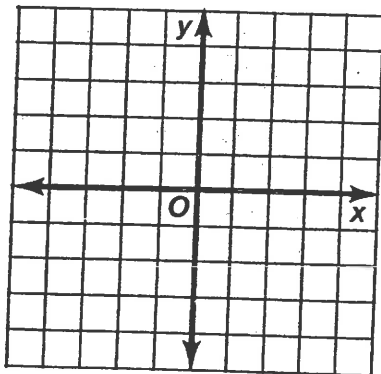
③ $y \geq -2x - 3$



R Quadrants I, III, IV; includes boundary line.

P All four quadrants; includes boundary line.

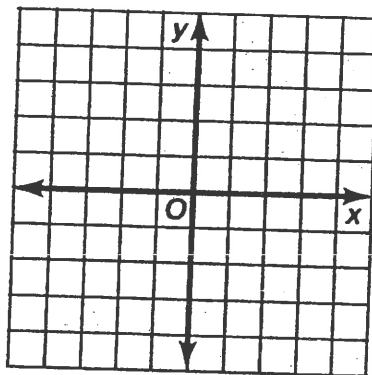
④ $y > -\frac{1}{2}x + 1$



O Quadrants I, II, IV; includes boundary line.

E Quadrants I, II, IV; excludes boundary line.

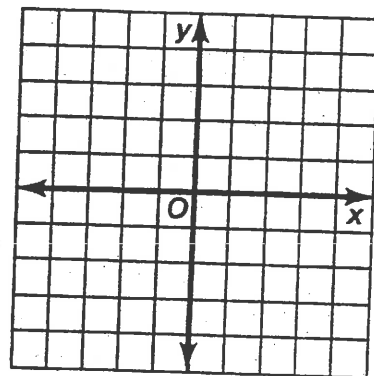
⑤ $y < \frac{5}{4}x - 2$



M Quadrants I, III, IV; excludes boundary line.

S Quadrants I, II, IV; excludes boundary line.

⑥ $y \geq -x + 3$



L All four quadrants; includes boundary line.

T Quadrants I, II, IV; includes boundary line.

5

4

4

6

3

1

6

6

2