

### Addition Rules:

1. If the signs are the same – add and keep the sign.
2. If the signs are different – subtract and keep the sign of the bigger number

### Subtraction Rule:

1. Copy the first number exactly as it is, switch the operation symbol ( - to + ), then switch the second number to its opposite

### Multiplication and Division Rules:

1. If the signs are different ( + and - ) the answer is negative
2. If the signs are the same (both positive or both negative) the answer is positive

# + SUM UP +

Do any exercise below and find your answer in the code key. Notice the letter above it. Print this letter in the box at the bottom of the page that contains the number of the exercise. Keep working and you will create a special message.

## CODE KEY

W	G	H	D	L	S	A	E	O	Y	I	U	T	C	M	R	P	N	F
-18	-15	-13	-10	-8	-7	-6	-4	-3	-1	0	2	3	4	5	7	8	14	17

①  $-8 + 2 =$

②  $6 + 8 =$

③  $5 + -9 =$

④  $-9 + 1 =$

⑤  $-3 + -1 =$

⑥  $-1 + 5 =$

⑦  $-3 + 6 =$

⑧  $9 + -2 =$

⑨  $-3 + 3 =$

⑩  $-5 + 9 =$

⑪  $-7 + -3 =$

⑫  $8 + -8 =$

⑬  $-1 + -6 =$

⑭  $-20 + 7 =$

⑮  $-9 + -9 =$

⑯  $-7 + 1 =$

⑰  $2 + -9 =$

⑱  $-9 + -4 =$

⑲  $-7 + 3 =$

⑳  $3 + 4 =$

㉑  $-7 + -8 =$

㉒  $4 + -8 =$

㉓  $-6 + 9 =$

㉔  $-10 + 3 =$

㉕  $6 + -7 =$

㉖  $-9 + 6 =$

㉗  $-3 + 5 =$

㉘  $2 + -5 =$

㉙  $-7 + 9 =$

㉚  $8 + -5 =$

㉛  $-1 + -2 =$

㉜  $8 + 9 =$

㉝  $-8 + 1 =$

㉞  $3 + -6 =$

㉟  $-2 + 7 =$

㊱  $-5 + 1 =$

㊲  $-1 + 4 =$

㊳  $4 + -7 =$

㊴  $-4 + 6 =$

㊵  $-9 + -6 =$

㊶  $7 + -20 =$

㊷  $-15 + 8 =$

㊸  $7 + -3 =$

㊹  $-1 + 8 =$

㊺  $3 + -9 =$

㊻  $-1 + 9 =$

㊼  $8 + -12 =$

㊽  $-3 + -4 =$

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	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48



# What should you do when you can't sleep?

Do any exercise below and find your answer in the corresponding answer column. The letter of the exercise goes in the box that contains the number of the answer. Keep working and you will discover the answer to the title question.

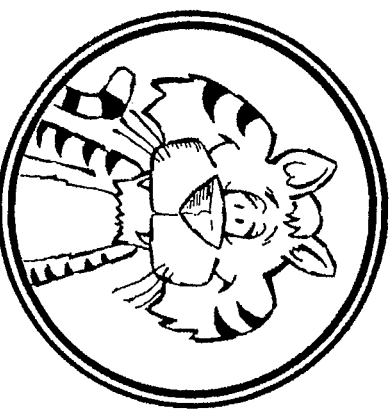
<b>T</b> 3 - 7 =	<b>41</b> -10	<b>E</b> -5 - -15 =	<b>10</b> 17	<b>E</b> -3 - -1 =	<b>38</b> 18
<b>R</b> -2 - 5 =	<b>9</b> 8	<b>R</b> 8 - -9 =	<b>24</b> 8	<b>C</b> -7 - 8 =	<b>25</b> -10
<b>E</b> 7 - -1 =	<b>13</b> -4	<b>D</b> 3 - -13 =	<b>12</b> 2	<b>S</b> 2 - -5 =	<b>26</b> -2
<b>U</b> 9 - 3 =	<b>29</b> 5	<b>O</b> -2 - -4 =	<b>4</b> 10	<b>M</b> 13 - 4 =	<b>42</b> 0
<b>O</b> -5 - -10 =	<b>23</b> -6	<b>Y</b> -6 - 6 =	<b>17</b> -8	<b>O</b> -2 - -20 =	<b>33</b> -15
<b>F</b> 1 - -11 =	<b>37</b> -7	<b>E</b> 15 - 7 =	<b>27</b> -10	<b>F</b> -9 - -9 =	<b>1</b> 9
<b>H</b> -8 - -2 =	<b>32</b> 6	<b>D</b> -9 - -1 =	<b>30</b> -12	<b>B</b> 6 - -16 =	<b>8</b> 7

<b>C</b> 4 - -4 =	<b>15</b> -7	<b>O</b> 5 - 5 =	<b>35</b> -1	<b>O</b> -7 - 4 =	<b>3</b> 14
<b>O</b> -3 - -7 =	<b>11</b> 9	<b>E</b> -4 - -10 =	<b>20</b> 0	<b>E</b> 4 - 7 =	<b>16</b> -3
<b>A</b> -1 - -12 =	<b>2</b> 4	<b>T</b> -9 - -5 =	<b>7</b> 4	<b>L</b> -4 - -7 =	<b>36</b> -14
<b>E</b> 2 - 9 =	<b>34</b> -13	<b>N</b> 6 - 7 =	<b>28</b> 17	<b>P</b> 7 - -4 =	<b>6</b> 3
<b>F</b> 17 - 4 =	<b>31</b> -9	<b>S</b> 15 - -2	<b>14</b> -17	<b>G</b> -7 - -7 =	<b>40</b> -11
<b>O</b> -11 - -2 =	<b>5</b> 8	<b>O</b> -8 - -12 =	<b>22</b> -4	<b>V</b> 7 - -7 =	<b>18</b> 0
<b>T</b> 6 - -3 =	<b>21</b> 13	<b>H</b> -11 - -6 =	<b>19</b> -14	<b>D</b> -7 - -7 =	<b>39</b> 11

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	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42

# What Should You Do If You Are Surrounded By 20 Lions, 15 Tigers And 10 Leopards?

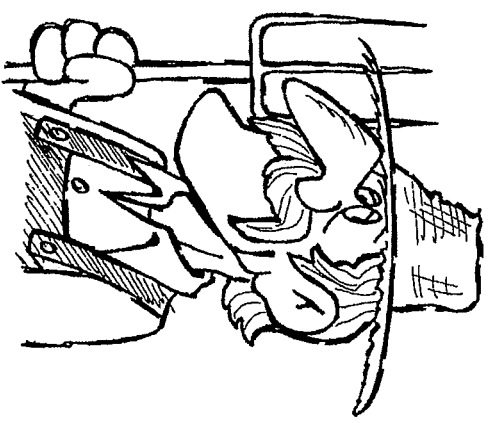
Do any exercise below and find your answer in one of the boxes at the bottom of the page. Write the letter of the exercise in this box. (To make it easier to find your answer, the answers are arranged in order from smallest to largest.) Keep working and you will discover the answer to the title question.



- Y**  $-6 + 2 =$                       **T**  $-4 + -25 =$                       **F**  $60 - -15 =$                       **J**  $-32 + -32 =$
- O**  $3 - -7 =$                       **P**  $37 - 12 =$                       **J**  $10 + 6 =$                       **M**  $-1 - -20 =$
- D**  $9 + -4 =$                       **O**  $17 - 18 =$                       **D**  $-5 - -20 =$                       **W**  $5 + -25 =$
- E**  $-7 + -2 =$                       **S**  $10 + -2 =$                       **H**  $4 - 14 =$                       **N**  $16 + -12 =$
- U**  $-3 - -20 =$                       **E**  $-11 - -4 =$                       **T**  $12 + -6 =$                       **R**  $-48 + 43 =$
- O**  $-16 + 18 =$                       **U**  $-30 - 20 =$                       **S**  $-30 - 13 =$                       **M**  $2 - 10 =$
- T**  $1 - 12 =$                       **O**  $-1 - -8 =$                       **I**  $-8 + -9 =$                       **T**  $-6 + 15 =$
- A**  $4 + -22 =$                       **T**  $-17 + 2 =$                       **O**  $-18 - -5 =$                       **R**  $-69 - -69 =$
- F**  $-4 - 10 =$                       **N**  $22 + -9 =$                       **P**  $14 + -3 =$                       **G**  $50 + -53 =$
- O**  $31 - -6 =$                       **R**  $-20 - -8 =$                       **F**  $15 - -45 =$                       **R**  $-7 + 1 =$
- A**  $-3 + 15 =$                       **U**  $-32 + 35 =$                       **R**  $-7 + 1 =$

-64	-50	-43	-29	-20	-18	-17	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-1
0	2	3	4	5	6	7	8	9	10	11	12	13	15	16	17	19	25	37	60	75

# FAMOUS FARMING EXPRESSION



The multiplication table below contains 42 mistakes. Shade in each box that contains a mistake. Please use pencil so you can erase if necessary.  
YOU WILL END UP WITH A FAMOUS FARMING EXPRESSION!

X	2	-4	-9	6	3	8	-1	4	-8	-2	-6	7	-5	9	-7
-3	6	-12	-27	-18	9	-24	-3	12	-24	6	-18	-21	-15	27	-21
9	-18	-36	-81	54	-27	72	9	36	-72	-18	54	63	45	81	63
-6	12	-24	54	-36	18	-48	-6	24	48	12	-36	-42	-30	-54	-42
5	-10	-20	-45	30	-15	40	5	20	-40	-10	30	35	25	45	35
-7	14	-28	-63	-42	21	-56	-7	28	-56	14	-42	-49	-35	63	-49

# What did ZORNA say about marrying a shorter man?

Do any exercise below and find your answer in one of the boxes at the bottom of the page. Write the letter of the exercise in that box. The answers are arranged in order from smallest to largest. Keep working and you will discover the answer to the title question.

- |                                       |                          |                                      |                            |                                      |
|---------------------------------------|--------------------------|--------------------------------------|----------------------------|--------------------------------------|
| $\textcircled{E} \frac{36}{-2} =$     | <b>A</b> $-12 \div 4 =$  | $\textcircled{V} \frac{39}{3} =$     | <b>A</b> $750 \div 10 =$   | $\textcircled{B} \frac{3110}{-10} =$ |
| $\textcircled{C} \frac{-50}{-2} =$    | <b>E</b> $60 \div 15 =$  | $\textcircled{O} \frac{-54}{-6} =$   | <b>E</b> $-42 \div -7 =$   | $\textcircled{N} \frac{900}{300} =$  |
| $\textcircled{A} \frac{100}{-4} =$    | <b>T</b> $45 \div -9 =$  | $\textcircled{L} \frac{311}{1} =$    | <b>R</b> $-150 \div 2 =$   | $\textcircled{S} \frac{81}{-9} =$    |
| $\textcircled{D} \frac{-670}{-10} =$  | <b>A</b> $-48 \div -4 =$ | $\textcircled{N} \frac{38}{-19} =$   | <b>E</b> $-100 \div -2 =$  | $\textcircled{L} \frac{-430}{-2} =$  |
| $\textcircled{E} \frac{9100}{-100} =$ | <b>R</b> $-49 \div -7 =$ | $\textcircled{V} \frac{-63}{3} =$    | <b>T</b> $67 \div -1 =$    | $\textcircled{H} \frac{-48}{6} =$    |
| $\textcircled{S} \frac{-45}{3} =$     | <b>A</b> $-3 \div -3 =$  | $\textcircled{T} \frac{300}{-2} =$   | <b>N</b> $-80 \div -40 =$  | $\textcircled{L} \frac{-48}{3} =$    |
| $\textcircled{A} \frac{600}{4} =$     | <b>E</b> $-60 \div 5 =$  | $\textcircled{H} \frac{1000}{100} =$ | <b>H</b> $150 \div -5 =$   | $\textcircled{T} \frac{-91}{-1} =$   |
|                                       | <b>O</b> $-200 \div 4 =$ |                                      | <b>R</b> $-30 \div 5 =$    |                                      |
|                                       | <b>A</b> $-90 \div 9 =$  |                                      | <b>T</b> $1700 \div -10 =$ |                                      |
|                                       | <b>H</b> $0 \div -7 =$   |                                      | <b>V</b> $100 \div 20 =$   |                                      |
|                                       | <b>D</b> $77 \div -7 =$  |                                      | <b>T</b> $13 \div -13 =$   |                                      |
|                                       | <b>E</b> $-215 \div 1 =$ |                                      | <b>V</b> $120 \div 4 =$    |                                      |
|                                       | <b>T</b> $96 \div 12 =$  |                                      | <b>M</b> $-100 \div 25 =$  |                                      |
|                                       | <b>E</b> $-75 \div -5 =$ |                                      | <b>V</b> $-42 \div 3 =$    |                                      |
|                                       | <b>O</b> $56 \div -8 =$  |                                      | <b>L</b> $80 \div 5 =$     |                                      |

-311	-215	-170	-150	-91	-75	-67	-50	-30	-25	-21	-18	-16	-15	-14	-12	-11	-10	-9	-8	-7	-6	-5					
-4	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10	12	13	15	16	25	30	50	67	75	91	150	215	311

Name \_\_\_\_\_

**Unit 2 Lessons 20-23 Solving Equations Using Algebra review**  
**Homework/classwork 100 pts**

**SOLVE:**

EX)  $5x - 4 = 21$   
 $5x - 4 = 21$  Re-write  
 $\quad + 4 \quad + 4$  Additive inverses

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$\frac{5x}{5} = \frac{25}{5}$  Division property  
 $x = 5$

**CHECK: (PEMDAS)**

$5x - 4 = 21$  Original  
 $5(5) - 4 = 21$  Substitution  
 $25 - 4 = 21$  Work  
 $21 = 21$  Check

1)  $-7x + 6 = 41$

**SOLVE:**

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**CHECK: (PEMDAS)**

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2)  $784 = 11b - 8$

**SOLVE:**

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**CHECK: (PEMDAS)**

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Name \_\_\_\_\_

### Unit 3 Lessons 13 - 15 Writing and Solving Inequality Word Problems ((Class Participation - Whole group)

Objective: 7.EE.4.b Solve word problems leading to inequalities of the form  $px + q > r$  or  $px + q < r$ , where  $p$ ,  $q$ , and  $r$  are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.

For each problem, write and solve the inequality. Graph the solution. Be prepared to describe the solution.

Ex: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$110. Write an inequality for the number of sales you need to make and describe the solutions.

Let  $s$  = the number of sales

$$3s + 50 \geq 110$$

ck:  $3s + 50 \geq 110$  (Choose  $s = 21$ )

$$3s + 50 \geq 110$$

$$3(21) + 50 \geq 110$$

$$\begin{array}{r} 3s + 50 \geq 110 \\ - 50 \quad -50 \\ \hline 3s \geq 60 \end{array}$$

$$63 + 50 \geq 110$$

$$3s \geq 60$$

$$113 \geq 110 \quad \text{True}$$

$$\frac{3s}{3} \geq \frac{60}{3}$$

$$s \geq 20$$



I need to make \_\_\_\_\_ in sales this week.



# What Do Race Car Drivers Like To Do?

Simplify each expression and find your answers at the bottom of the page. Shade out the letter or number above each correct answer. When you finish, the answer to the title question will remain!

- 1  $-4x + 9x$
- 2  $6y - 8y$
- 3  $-7x + x$
- 4  $9y - y$
- 5  $-5x - 5x$
- 6  $3y - 7y$
- 7  $-x - 8x + 7$
- 8  $y - 2y - 3$
- 9  $5 + 5x - 4x$
- 10  $3y - 6 + 7y - 4y$
- 11  $-9x - 5 - 8 + x$
- 12  $6 - y + 5y - 6y$
- 13  $3x - 8y + 2x - 5 - 5y$
- 14  $-9x + 3 + 2x - 9y - 8$
- 15  $5 + 6x - 3y + x + 8y$
- 16  $-4x - 4 + x - 2y + 7x$
- 17  $-8x + 7y - x - 6y + 4x$
- 18  $x + 5 - 2x + 3y - y$
- 19  $9x - 3y + 7 - 4x + y - 3$
- 20  $-x - 3 + 5x + 6y + 8x - 9$
- 21  $4x - 4 - 8y + 8 - 5x + 1$
- 22  $3x - x + 6y - 4x - y$
- 23  $2x + 2y - x - y - 7 + 5y$
- 24  $6x - 8x - 4y - x + 5y - 2y$

S	$-x - 8y + 5$
Z	$-9x + 7$
C	$-3x - y$
R	$-x + 2y + 5$
N	$5x - 13y - 5$
X	$8x - y$
E	$-6x$
L	$-y - 3$
I	$-5x + y$
C	$5x$
4	$-2y + 6$
A	$x + 6y - 7$
8	$x + 5$
L	$6x - y + 3$
O	$-8x - 13$
M	$8y$
A	$7x + 5y + 5$
S	$-2y$
E	$12x + 6y - 12$
R	$x + 3y - 2$
I	$-10x$
Z	$4x - 2y - 4$
O	$6y - 6$
8	$-3x + 2y + 1$
W	$-2x + 5y$
E	$-4y$
D	$5x - 2y + 4$
Y	$-7x - 9y - 5$

# What Does SANTA Do When It Rains?

TO ANSWER THIS QUESTION:

Simplify each expression below. Circle the letter of each answer. Then rearrange the circled letters in each grid to make a word. Write the words in order in the boxes at the bottom of the page.

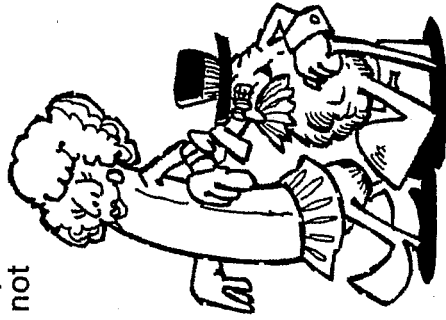
<p>① <math>-4x + 9x + 3</math></p> <p>② <math>5x - (-3x)</math></p>	<p>Ⓑ <math>6x</math></p> <p>ⓓ <math>8x</math></p>	<p>Ⓔ <math>5x + 3</math></p> <p>Ⓐ <math>5x - 1</math></p>
<p>③ <math>-8n - (-2n) - 7</math></p> <p>④ <math>6n + (-5n) + 3</math></p> <p>⑤ <math>-3n + n + 7 + 4n</math></p> <p>⑥ <math>9 - 6n - (-5n) - (-8)</math></p>	<p>Ⓢ <math>n + 3</math></p> <p>Ⓣ <math>-n - 6</math></p> <p>Ⓤ <math>-n + 17</math></p>	<p>Ⓛ <math>n + 5</math></p> <p>Ⓔ <math>-6n - 7</math></p> <p>Ⓢ <math>2n + 7</math></p>
<p>⑦ <math>-8t + (-5) + (-t) + 1</math></p> <p>⑧ <math>-2t + 7 - (-t) + 9t</math></p> <p>⑨ <math>13t + 5 + 9 - (-t)</math></p>	<p>Ⓝ <math>14t + 11</math></p> <p>Ⓛ <math>-9t - 4</math></p> <p>Ⓞ <math>5t + 7</math></p>	<p>Ⓛ <math>14t + 14</math></p> <p>Ⓢ <math>-9t + 2</math></p> <p>Ⓐ <math>8t + 7</math></p>
<p>⑩ <math>u + (-10u) + (-4) - (-1)</math></p> <p>⑪ <math>-6 - 3u + 9 - (-4u)</math></p> <p>⑫ <math>-u - 7 + 8u + (-3u)</math></p>	<p>Ⓔ <math>8u - 7</math></p> <p>Ⓢ <math>4u - 7</math></p> <p>ⓓ <math>u + 3</math></p>	<p>Ⓐ <math>u + 9</math></p> <p>Ⓛ <math>-9u - 3</math></p> <p>Ⓣ <math>-9u + 5</math></p>
<p>⑬ <math>4k + 7 + 3k - 8 - 3k</math></p> <p>⑭ <math>9 + (-2k) + (-4) - 6k + 1</math></p> <p>⑮ <math>8k - k + 7 - (-5k) - 8</math></p> <p>⑯ <math>-4 - 2k - (-4) + (-6k)</math></p>	<p>Ⓐ <math>4k - 1</math></p> <p>Ⓔ <math>12k + 3</math></p> <p>Ⓝ <math>-8k + 6</math></p>	<p>Ⓡ <math>-8k</math></p> <p>Ⓛ <math>12k - 1</math></p> <p>Ⓜ <math>-8k + 2</math></p>
<p>⑰ <math>-5x - 5 + 3x + (-1) - x</math></p> <p>⑱ <math>x - (-3) + 8 - 2x - 6</math></p> <p>⑲ <math>4x - 5x + (-3) + 9x - 7x</math></p> <p>⑳ <math>-x + 4x - (-8x) - 9 + 2x + 1</math></p>	<p>Ⓐ <math>13x - 8</math></p> <p>Ⓒ <math>x - 3</math></p> <p>Ⓔ <math>-3x - 6</math></p>	<p>Ⓢ <math>10x - 8</math></p> <p>Ⓞ <math>x - 5</math></p> <p>Ⓡ <math>-x + 5</math></p>

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# Why Did The Banana Go Out With The Prune?

TO ANSWER THIS QUESTION: Cross out each box that contains the solution of one of the equations. When you finish, write the letters in order from the boxes that are not crossed out in the boxes at the bottom of the page.



- ①  $5(2x - 3) + 8 = 9$
- ②  $4(9 + 3t) - 12 = -6$
- ③  $7y - 2(8y + 1) = 4$
- ④  $3 = 7(4 - 2u) - 6u$
- ⑤  $50 = 15 - 6(2x - 5)$
- ⑥  $3(-6x + 9) - 10x = 1$
- ⑦  $-9(8 - m) - 13 = 5$
- ⑧  $-8x + 6(3x + 5) = -25$
- ⑨  $12(4 + n) + 5(-2n - 9) = 18$
- ⑩  $-2 = -4(-7y + 1) + 5(8 + 2y)$
- ⑪  $18(-x - 2) - 4(-9 + 3x) = -14$
- ⑫  $3(6s + 12) - (10s - 6) = 0$
- ⑬  $-6(4x + 1) + 7x + 9(x - 3) = 4$
- ⑭  $10(-3 - 2t) + 10 - 2(6t - 13) = 0$
- ⑮  $-7 = -5y + 4(-y + 9) - 7(7 + 3y)$
- ⑯  $-(15p - 1) + 24 + 2(5 + 5p) = 0$

LO	BE	HE	CA	US	HA	EH	DT	EH	RO	VE	UB	IT	LE
$-\frac{2}{3}$	$\frac{3}{16}$	$\frac{3}{211}$	$-\frac{1}{5}$	$\frac{7}{15}$	$-1\frac{5}{7}$	$-2\frac{1}{22}$	$-\frac{1}{13}$	$-\frac{5}{48}$	$\frac{1}{68}$	$1\frac{3}{5}$	-15	$-\frac{5}{12}$	$\frac{1}{43}$
GE	ET	TT	RY	IN	ST	GA	ME	AN	DA	RK	FA	TE	LL
$-\frac{8}{17}$	-1	$11\frac{1}{2}$	$1\frac{1}{4}$	-4	10	$\frac{1}{6}$	$7\frac{1}{2}$	$\frac{13}{14}$	$-3\frac{11}{16}$	7	$-\frac{1}{54}$	$\frac{3}{27}$	$-\frac{1}{52}$



# Did you hear about...

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

## DIRECTIONS:

Solve any inequality below. In the answer column, find the inequality that describes the solution set and notice the word next to it. Write this word in the box that has the same letter as that exercise.

KEEP WORKING AND YOU WILL HEAR ABOUT A COLLEGE EYE DEAL.



- (A)  $2(3x - 5) > 2x + 6$
- (B)  $8(2 + x) \leq 3x - 9$
- (C)  $-3(4x - 6) < 7 - x$
- (D)  $13x - 7(-2 + x) \geq 4x - 10$
- (E)  $5(-3x - 1) + 7 \leq -x + 30$
- (F)  $12 + 5x > 2(8x - 6) - 7x$
- (G)  $9x - 2x \geq 14 - 9(-x - 4)$
- (H)  $-4(3 - 5x) - 11x < 3x + 6$
- (I)  $10(x + 2) > -2(6 - 9x)$
- (J)  $7(2 + 2x) \geq 4(-x - 10)$
- (K)  $11 + 3(-8 + 5x) < 16x - 5$
- (L)  $-6(7x - 1) < -8x + 9(-3x - 4)$
- (M)  $-9x + 2(4x + 12) \leq 4(1 - 3x) - 13$
- (N)  $7(-x + 4) + 16 \geq 5x - (10x - 6) - 6$
- (O)  $12(2x + 3) - 3(8 + 7x) > 0$

- $x < 6$ —WHO
- $x \leq -3$ —OVER
- $x < 4$ —HAVE
- $x \geq 22$ —STUDENTS
- $x \leq -5$ —CROSS
- $x \geq -12$ —COLLEGE
- $x \leq -2$ —EYES
- $x > 6$ —CONTROL
- $x > 4$ —THE
- $x < 1$ —KNOW
- $x < 3$ —TO
- $x \leq 22$ —HIS
- $x \geq -2$ —PROFESSOR
- $x \leq -25$ —SEEMED
- $x \geq -3$ —ABSOLUTELY
- $x \geq -25$ —SUBJECT
- $x > -8$ —NO
- $x > 1$ —EYED
- $x < -8$ —HELP
- $x > -4$ —PUPILS
- $x < -4$ —TEACH

# Why Was The Hit Record Nervous?

Find the UNION of the two given sets in the column of graphs below. Write the letter next to the graph in each box that contains the number of the exercise. Keep working and you will discover the answer to the title question.

①  $A = \{x \mid x > 2\}$

$B = \{x \mid x < -1\}$

②  $X = \{x \mid x \geq 2\}$

$Y = \{x \mid x \leq -1\}$

③  $A = \{x \mid x \geq 0\}$

$B = \{x \mid x < -3\}$

④  $X = \{x \mid x > 0\}$

$Y = \{x \mid x \leq -3\}$

⑤  $A = \{x \mid x > -2\}$

$B = \{x \mid x > 2\}$

⑥  $X = \{x \mid x \geq 1\}$

$Y = \{x \mid x > 4\}$

⑦  $A = \{x \mid x < 4\}$

$B = \{x \mid x \leq -1\}$

⑧  $X = \{x \mid x \geq 3\}$

$Y = \{x \mid x \leq -2\}$

⑨  $A = \{x \mid x = -1\}$

$B = \{x \mid x > -1\}$

⑩  $X = \{x \mid x = 0\}$

$Y = \{x \mid x < 3\}$

⑪  $A = \{x \mid x < 1\}$

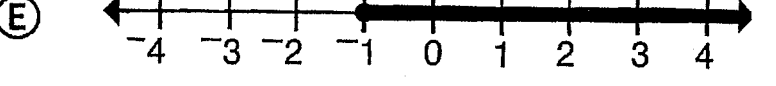
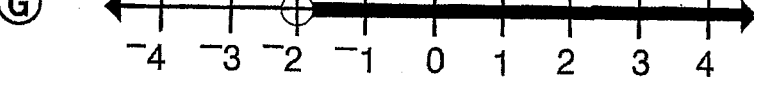
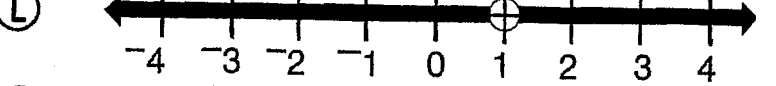
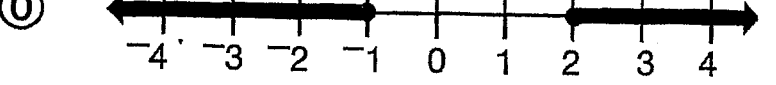
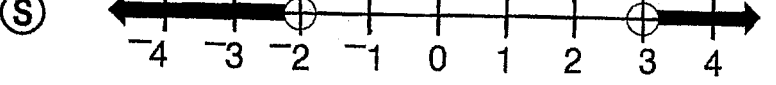
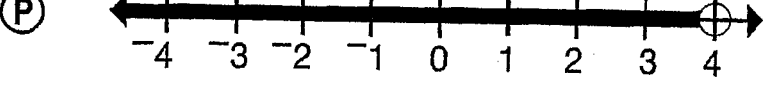
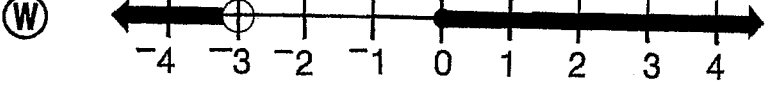
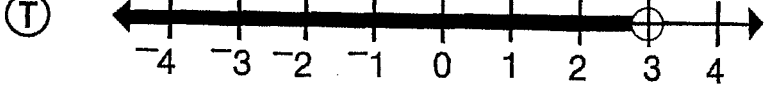
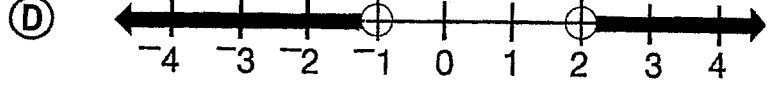
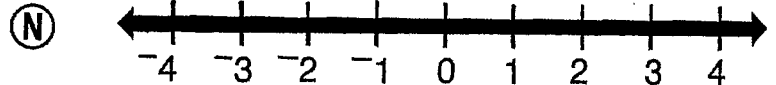
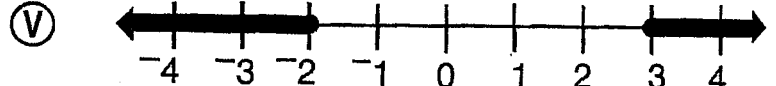
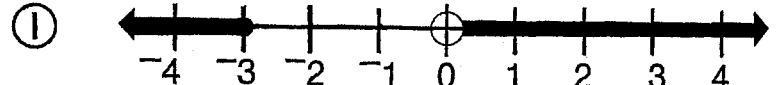
$B = \{x \mid x > 1\}$

⑫  $X = \{x \mid x \geq -4\}$

$Y = \{x \mid x < 0\}$

⑬  $A = \{x \mid x > 3\}$

$B = \{x \mid x < -2\}$

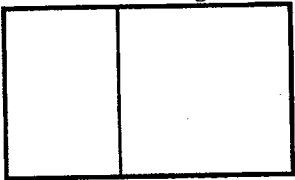


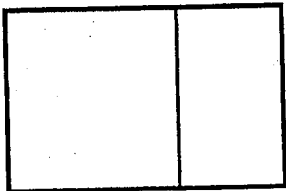
4	10	3	6	13	11	4	8	4	12	5	2	12	13	7	4	12	13	6	12	1	12	9	9	1	11	9	13
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# What Is the World's Longest Punctuation Mark?

For each exercise, write the letter of the answer in the box containing the exercise number.

In Exercises 1-2, circle the expression that does *not* represent the area of the outside shaded rectangle. Write its letter in the corresponding numbered box.

1.  S.  $4(x + y)$   
K.  $4x + 4y$   
T.  $4 + xy$

2.  H.  $ab + 7$   
R.  $a(b + 7)$   
A.  $ab + 7a$

In Exercises 3-22, use the distributive property to complete each statement.

3.  $9(a + b) = 9a + \underline{\hspace{2cm}}$

4.  $3(n + 7) = \underline{\hspace{2cm}} + 21$

5.  $2(15 + q) = \underline{\hspace{2cm}} + 2q$

6.  $a(b + 8) = ab + \underline{\hspace{2cm}}$

7.  $x(x + 5) = \underline{\hspace{2cm}} + 5x$

8.  $16(y + 3) = 16y + \underline{\hspace{2cm}}$

9.  $e(s + t) = es + \underline{\hspace{2cm}}$

10.  $7(p + q + 4) = 7p + 7q + \underline{\hspace{2cm}}$

11.  $a(b + c + 11) = \underline{\hspace{2cm}} + ac + 11a$

12.  $k(8 + 3 + k) = 8k + 3k + \underline{\hspace{2cm}}$

13.  $7x + 7y = 7(x + \underline{\hspace{2cm}})$

14.  $3m + 3n = 3(\underline{\hspace{2cm}} + n)$

15.  $8a + 8b = \underline{\hspace{2cm}}(a + b)$

16.  $ax + ay = \underline{\hspace{2cm}}(x + y)$

17.  $nt + 4n = n(t + \underline{\hspace{2cm}})$

18.  $2d + 12 = 2(\underline{\hspace{2cm}} + 6)$

19.  $5e + 35 = 5(e + \underline{\hspace{2cm}})$

20.  $x^2 + 9x = x(\underline{\hspace{2cm}} + 9)$

21.  $4p + 4q + 80 = 4(p + q + \underline{\hspace{2cm}})$

22.  $kw + wy + w^2 = w(k + y + \underline{\hspace{2cm}})$

Answers for 3-12:

U. 48      O.  $3n$       N. 30  
 E.  $9b$       D. 28      E.  $k^2$   
 T.  $5c$       H.  $x^2$       N.  $et$   
 E.  $8a$       R.  $ab$       S.  $3k$

Answers for 13-22:

H.  $w$       D.  $y$       B.  $k$   
 M.  $m$       R.  $d$       T.  $a$   
 L. 15      E. 8      D. 7  
 E. 4      S. 20      A.  $x$

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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# What Did the Math Teacher Say After Spending 8 Hours in the Ice and Snow?



For each problem, label a variable (let  $x$  = the unknown), then write and solve an equation. Find your equation in the column at the right. Write the letter of the equation in the box at the bottom that contains the solution to the problem.

- 1 A set of 8 dessert dishes cost \$20. What was the cost of each dish?
- 2 Ben and Jerry together own 24 comic books. If Ben owns 6 comic books, how many does Jerry own?
- 3 Hans Klobber sells vacuum cleaners. He gets to keep one eighth of his sales as a commission. How much must he sell in order to earn \$1000?
- 4 On first down, a football team had a loss of 8 yd. After two downs, the team had an overall gain of 20 yd. How many yards were gained on second down?
- 5 After she wrote a check for \$240, May Bounce had a balance in her checking account of -\$6. What was her balance before she wrote the check?
- 6 A bank of 8 floodlights together use 1000 watts of power. How much power is used by each bulb?
- 7 Between noon and 9 P.M., the temperature dropped  $20^{\circ}\text{F}$ . If the temperature was  $-8^{\circ}\text{F}$  at 9 P.M., what was the temperature at noon?
- 8 If a strawberry pie is divided into 6 equal slices, each slice has 240 calories. How many calories are in the whole pie?
- 9 A chest was resting on the ocean floor 1000 ft below the surface. It was lifted to the deck of a ship 8 ft above the surface. How far was the chest lifted?
- 10 When all the kids who tried out for Little League were divided into teams of 20 players, there were exactly 8 teams. How many kids tried out?

## equations

R  $\frac{1}{8}x = 1000$

S  $x + 8 = 1000$

M  $\frac{x}{20} = 8$

B  $8x = 20$

N  $\frac{x}{6} = 240$

U  $-8 + x = 20$

E  $6x = 240$

R  $-1000 + x = 8$

B  $8x = 1000$

M  $x + 6 = 24$

T  $\frac{x}{8} = -20$

I  $x - 240 = -6$

A  $x - 20 = -8$

184	\$234	175 W	$12^{\circ}\text{F}$	18	988 ft	1440 cal	28 yd	160	\$2.50	$26^{\circ}\text{F}$	125 W	1008 ft	\$8000	32 yd
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# How Did Captain Hook Get Injured?

Do each exercise and find your answer in the set of answers to its right. Write the letter of the exercise in the box containing the number of the answer.

I. Write using an exponent.

(H)  $3 \times 3 \times 3 \times 3$

(I)  $7 \times 7 \times 7$

(E)  $4 \times 4 \times 4 \times 4 \times 4$

(W)  $10 \times 10 \times 10 \times 10$

(O)  $9 \times 9$

(H)  $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$

(18)  $9^3$

(33)  $10^5$

(28)  $10^4$

(20)  $7^3$

(10)  $3^4$

(22)  $4^7$

(9)  $4^6$

(7)  $4^5$

(15)  $9$

(16)  $3^7$

II. Write the product.

(E)  $4^2$

(N)  $7^2$

(H)  $2^3$

(O)  $5^3$

(I)  $10^4$

(T)  $2^5$

(A)  $6^3$

(E)  $12^2$

(H)  $5^6$

(S)  $8^4$

(N)  $9^3$

(D)  $10^7$

(25)  $8$

(31)  $729$

(2)  $16$

(12)  $4,096$

(24)  $32$

(5)  $10,000$

(36)  $49$

(6)  $14,725$

(30)  $125$

(1)  $15,625$

(17)  $144$

(23)  $1,000,000$

(35)  $216$

(8)  $10,000,000$

III. Write as a power of 10.

(E)  $1,000$

(I)  $100$

(W)  $100,000$

(D)  $1,000,000,000$

(N)  $10,000,000$

(T)  $10$

(21)  $10^1$

(19)  $10^5$

(11)  $10^2$

(14)  $10^7$

(26)  $10^3$

(33)  $10^8$

(3)  $10^4$

(37)  $10^9$

IV. Solve the equation.

(G)  $4 \times 10^2 = n$

(W)  $9 \times 10^5 = n$

(H)  $7 \times 10^4 = n$

(P)  $4 \times 10^6 = n$

(S)  $n \times 10^3 = 5,000$

(R)  $n \times 10^7 = 80,000,000$

(16)  $5$

(18)  $40,000$

(27)  $7$

(34)  $70,000$

(29)  $8$

(4)  $900,000$

(32)  $400$

(6)  $4,000,000$

(9)  $7,000$

(13)  $9,000,000$

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	27	28	29	30	31	32	33	34	35	36	37

(16)





# Why Did the Writer Enjoy Living in a Basement?

Do each exercise and find your answer to the right. Write the letter of the answer in the box containing the number of the exercise. If the answer has a ●, shade in the box instead of writing a letter in it.

I. Write each ratio as a fraction in simplest form.

- ① 7 to 12
- ② 9:4
- ③ 8 to 10
- ④ 20 to 12
- ⑤ 25:50
- ⑥ 6 out of 15
- ⑦ 80 to 60
- ⑧ 35 out of 100
- ⑨ 78 out of 780
- ⑩ 90:30
- ⑪ The ratio of wins to tosses for a team with 60 wins and 90 losses.
- ⑫ The ratio of girls to boys in a 7th grade class with 300 girls and 250 boys.
- ⑬ The ratio of red to blue for a purple paint made by mixing 24 oz of red with 28 oz of blue.
- ⑭ The ratio of blue to red for a purple paint made by mixing 24 oz of red with 28 oz of blue.

Answers:

- Ⓗ  $\frac{8}{5}$
- Ⓙ  $\frac{4}{5}$
- Ⓐ  $\frac{1}{10}$
- $\frac{4}{3}$
- $\frac{6}{5}$
- Ⓓ  $\frac{3}{10}$
- Ⓐ  $\frac{7}{12}$
- Ⓒ  $\frac{1}{2}$
- *f*
- Ⓐ  $\frac{7}{6}$
- Ⓔ *of*
- $\frac{5}{3}$
- Ⓔ  $\frac{9}{4}$
- Ⓘ  $\frac{6}{7}$
- Ⓔ  $\frac{2}{3}$
- Ⓘ  $\frac{2}{5}$

II. Write the ratio of the two measurements in the unit indicated (a *unit rate*).

- ⑮ A car traveled 300 miles on 15 gallons of gas. (miles per gallon)
- ⑯ Ima Smurf typed 120 words in 3 minutes. (words per minute)
- ⑰ Dr. Cranium traveled 2,800 miles in 5 hours: (miles per hour)
- ⑱ A gear revolved 960 times in 30 minutes. (revolutions per minute)
- ⑲ Gloria Trench earned \$144 in 8 hours. (dollars per hour)
- ⑳ Roger Bannister ran 5,280 feet in 4 minutes. (feet per second) (HINT 4 min = ? s)

Answers:

- Ⓜ 48
- ⓑ 560
- Ⓒ 32
- Ⓕ 22
- Ⓣ 15
- 20
- Ⓦ 40
- Ⓝ 520
- Ⓢ 18
- Ⓔ 36

13	3	7	16	9	5	15	1	4	17	11	19	8	12	18	2	20	10	14	6
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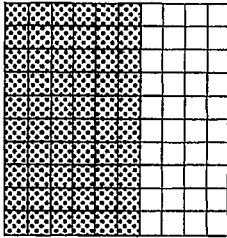
# What Do Centipedes Hate To Do?

Do each exercise and find your answer at the bottom of the page. Write the letter of the exercise in the box containing the answer.

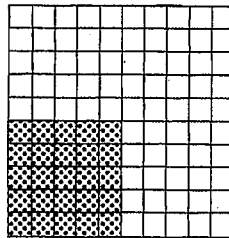


I. Write a percent for the amount shaded.

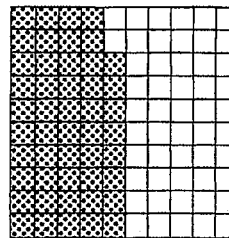
(T)



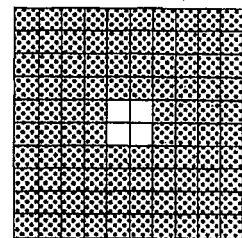
(E)



(F)



(O)



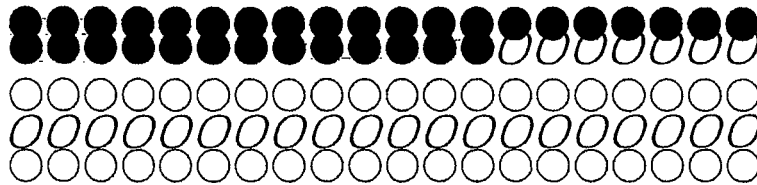
II. Write a percent for each group of circles.

(A)

the shaded circles

(E)

the unshaded circles



III. Write a percent for each ratio.

(S)

1 to 100

(N)

83 to 100

(O)

54 : 100

(T)

2 : 10

(W)

$\frac{75}{100}$

(H)

$\frac{24}{100}$

(O)

$\frac{8}{10}$

(F)

$\frac{5}{10}$

(H)

0.62

(O)

0.98

(Y)

0.4

(R)

0.1

(T)

0.03

(G)

0.86

(A)

0.07

(T)

1.0

IV. Solve.

(D)

There are 100 centimeters in a meter. What percent of a meter is 30 cm?

(N)

Gulliver tossed a coin 100 times and got 43 heads. What percent of the tosses were *tails*?

(T)

There are 100 cents in a dollar. What percent of a dollar is \$0.15?

(F)

Of 100 students surveyed, 90 chose math as their favorite subject. What percent chose math?

(O)

Of the 100 million acres in California, the federal government owns 45 million acres. What percent is this?

(R)

A sheet of 100 stamps has 22 stamps left. What percent of the stamps has already been used?

1%	3%	7%	10%	15%	18%	20%	24%	25%	29%	30%	33%	40%	42%	45%	48%	50%
54%	57%	59%	60%	62%	67%	71%	75%	78%	80%	83%	86%	88%	90%	96%	98%	100%

# What Happens If You Watch TV All Day?

For each exercise, write the missing numerator(s). Then compare the fractions. Write  $>$  or  $<$  in each  $\bigcirc$ .

Circle the letter in the corresponding column and write this letter in the box containing the exercise number.

				$>$	$<$
1	$\frac{2}{3} = \frac{\quad}{12}$	$\frac{3}{4} = \frac{\quad}{12}$	$\frac{2}{3} \bigcirc \frac{3}{4}$	R	E
2	$\frac{1}{4} = \frac{\quad}{20}$	$\frac{2}{5} = \frac{\quad}{20}$	$\frac{1}{4} \bigcirc \frac{2}{5}$	A	O
3	$\frac{5}{6} = \frac{\quad}{18}$	$\frac{7}{9} = \frac{\quad}{18}$	$\frac{5}{6} \bigcirc \frac{7}{9}$	T	F
4	$\frac{5}{8} = \frac{\quad}{24}$	$\frac{2}{3} = \frac{\quad}{24}$	$\frac{5}{8} \bigcirc \frac{2}{3}$	V	C
5	$\frac{2}{15} = \frac{\quad}{30}$	$\frac{1}{10} = \frac{\quad}{30}$	$\frac{2}{15} \bigcirc \frac{1}{10}$	E	N
6	$\frac{3}{4} = \frac{\quad}{16}$		$\frac{3}{4} \bigcirc \frac{11}{16}$	U	T
7	$\frac{5}{7} = \frac{\quad}{21}$		$\frac{5}{7} \bigcirc \frac{17}{21}$	B	S
8	$\frac{2}{5} = \frac{\quad}{25}$		$\frac{2}{5} \bigcirc \frac{9}{25}$	E	A
9	$\frac{7}{8} = \frac{\quad}{16}$		$\frac{7}{8} \bigcirc \frac{13}{16}$	Y	F
10	$\frac{3}{4} = \frac{\quad}{20}$	$\frac{7}{10} = \frac{\quad}{20}$	$\frac{3}{4} \bigcirc \frac{7}{10}$	K	H
11	$\frac{3}{8} = \frac{\quad}{24}$	$\frac{5}{12} = \frac{\quad}{24}$	$\frac{3}{8} \bigcirc \frac{5}{12}$	D	G
12	$\frac{13}{15} = \frac{\quad}{30}$	$\frac{5}{6} = \frac{\quad}{30}$	$\frac{13}{15} \bigcirc \frac{5}{6}$	I	O
13	$\frac{2}{9} = \frac{\quad}{36}$		$\frac{2}{9} \bigcirc \frac{7}{36}$	S	L

9	2	6	11	8	3	13	1	5	7	12	4	10
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# Where can you hear **MUSIC** on an ocean liner?

Write each fraction in lowest terms. Find your answer at the right and mark the letter next to it. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the bottom of the page.

<b>1</b>	$\frac{6}{9} =$	$\frac{2}{10} =$	$\frac{20}{35} =$	(L) $\frac{1}{5}$	(B) $\frac{2}{3}$	(E) $\frac{2}{7}$	(V) $\frac{4}{7}$
<b>2</b>	$\frac{2}{16} =$	$\frac{15}{18} =$	$\frac{20}{90} =$	(C) $\frac{4}{5}$	(H) $\frac{3}{4}$	(F) $\frac{2}{9}$	(O) $\frac{5}{6}$
<b>3</b>	$\frac{25}{75} =$	$\frac{12}{32} =$	$\frac{42}{49} =$	(G) $\frac{6}{7}$	(D) $\frac{3}{8}$	(A) $\frac{3}{7}$	(R) $\frac{1}{3}$
<b>4</b>	$\frac{10}{24} =$	$\frac{15}{27} =$	$\frac{50}{100} =$	(I) $\frac{1}{2}$	(M) $\frac{5}{12}$	(G) $\frac{5}{9}$	(E) $\frac{5}{8}$
<b>5</b>	$\frac{5}{40} =$	$\frac{8}{30} =$	$\frac{24}{36} =$	(R) $\frac{1}{8}$	(T) $\frac{4}{9}$	(N) $\frac{4}{15}$	(L) $\frac{2}{3}$
<b>6</b>	$\frac{12}{30} =$	$\frac{21}{36} =$	$\frac{60}{80} =$	(D) $\frac{7}{20}$	(C) $\frac{7}{12}$	(F) $\frac{2}{5}$	(E) $\frac{3}{4}$
<b>7</b>	$\frac{70}{100} =$	$\frac{250}{1,000} =$	$\frac{16}{24} =$	(W) $\frac{7}{10}$	(U) $\frac{2}{3}$	(R) $\frac{1}{4}$	(H) $\frac{7}{8}$
<b>8</b>	$\frac{8}{28} =$	$\frac{10}{60} =$	$\frac{45}{100} =$	(E) $\frac{1}{6}$	(K) $\frac{2}{5}$	(S) $\frac{9}{20}$	(H) $\frac{2}{7}$
<b>9</b>	$\frac{75}{100} =$	$\frac{8}{36} =$	$\frac{21}{24} =$	(D) $\frac{7}{8}$	(T) $\frac{7}{12}$	(L) $\frac{3}{4}$	(N) $\frac{2}{9}$
<b>10</b>	$\frac{18}{36} =$	$\frac{55}{75} =$	$\frac{120}{150} =$	(A) $\frac{4}{5}$	(R) $\frac{11}{15}$	(E) $\frac{2}{3}$	(S) $\frac{1}{2}$
<b>11</b>	40 minutes is what fraction of an hour?					(M) $\frac{1}{4}$	(P) $\frac{3}{5}$
	3 inches is what fraction of a foot?						
	10 ounces is what fraction of a pound?					(D) $\frac{2}{3}$	(G) $\frac{5}{8}$

5	7	1	9	3	11	4	6	10	2	8
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# Why Is Tuesday the Favorite Day of Math Teachers?

For each exercise, write the missing number. Find your answer in the set of boxes under the exercise. Write the letter of the exercise in the box containing the answer.

$$\textcircled{E} \frac{2}{3} = \frac{2 \times 5}{3 \times 5} = \frac{15}{15} \quad \textcircled{T} \frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12} \quad \textcircled{H} \frac{3}{7} = \frac{3 \times 8}{7 \times 8} = \frac{56}{56} \quad \textcircled{Y} \frac{5}{8} = \frac{5 \times 4}{8 \times 4} = \frac{20}{20}$$

$$\textcircled{A} \frac{1}{2} = \frac{1 \times 15}{2 \times 15} = \frac{30}{30} \quad \textcircled{S} \frac{3}{5} = \frac{3 \times 6}{5 \times 6} = \frac{18}{30} \quad \textcircled{T} \frac{7}{12} = \frac{7 \times 2}{12 \times 2} = \frac{24}{24} \quad \textcircled{O} \frac{4}{9} = \frac{4 \times 9}{9 \times 9} = \frac{36}{36}$$

$$\textcircled{H} \frac{2}{5} = \frac{20}{20} \quad \textcircled{I} \frac{3}{4} = \frac{36}{36} \quad \textcircled{A} \frac{1}{6} = \frac{18}{18} \quad \textcircled{T} \frac{7}{10} = \frac{70}{70} \quad \textcircled{L} \frac{5}{12} = \frac{60}{60}$$

$$\textcircled{Y} \frac{6}{7} = \frac{36}{36} \quad \textcircled{I} \frac{4}{15} = \frac{12}{12} \quad \textcircled{T} \frac{3}{8} = \frac{30}{30} \quad \textcircled{N} \frac{1}{3} = \frac{27}{27} \quad \textcircled{D} \frac{3}{20} = \frac{40}{40}$$

27	12	11	45	30	96	56	8	10	20	81	9	25	32	49	6	15	42	5	80	24	3	14	64
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$$\textcircled{A} \frac{5}{7} = \frac{21}{21} \quad \textcircled{U} \frac{1}{9} = \frac{63}{63} \quad \textcircled{E} \frac{5}{6} = \frac{30}{30} \quad \textcircled{A} \frac{2}{11} = \frac{18}{18} \quad \textcircled{S} \frac{9}{25} = \frac{36}{36}$$

$$\textcircled{E} \frac{3}{10} = \frac{18}{18} \quad \textcircled{R} \frac{7}{16} = \frac{21}{21} \quad \textcircled{A} \frac{4}{5} = \frac{10}{10} \quad \text{sto} = \frac{180}{180} \quad \textcircled{D} \frac{7}{20} = \frac{100}{100}$$

$$\textcircled{A} \frac{7}{8} = \frac{32}{32} \quad \textcircled{E} \frac{1}{5} = \frac{55}{55} \quad \textcircled{R} \frac{8}{9} = \frac{24}{24} \quad \textcircled{N} \frac{2}{15} = \frac{4}{4} \quad \textcircled{T} \frac{9}{10} = \frac{36}{36}$$

$$\textcircled{B} \frac{4}{7} = \frac{40}{40} \quad \textcircled{M} \frac{3}{4} = \frac{100}{100} \quad \textcircled{N} \frac{3}{16} = \frac{48}{48} \quad \textcircled{F} \frac{7}{12} = \frac{144}{144} \quad \textcircled{M} \frac{19}{20} = \frac{100}{100}$$

10	28	100	4	30	15	75	25	35	22	99	84	40	60	27	63	8	39	9	7	95	70	11	48
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