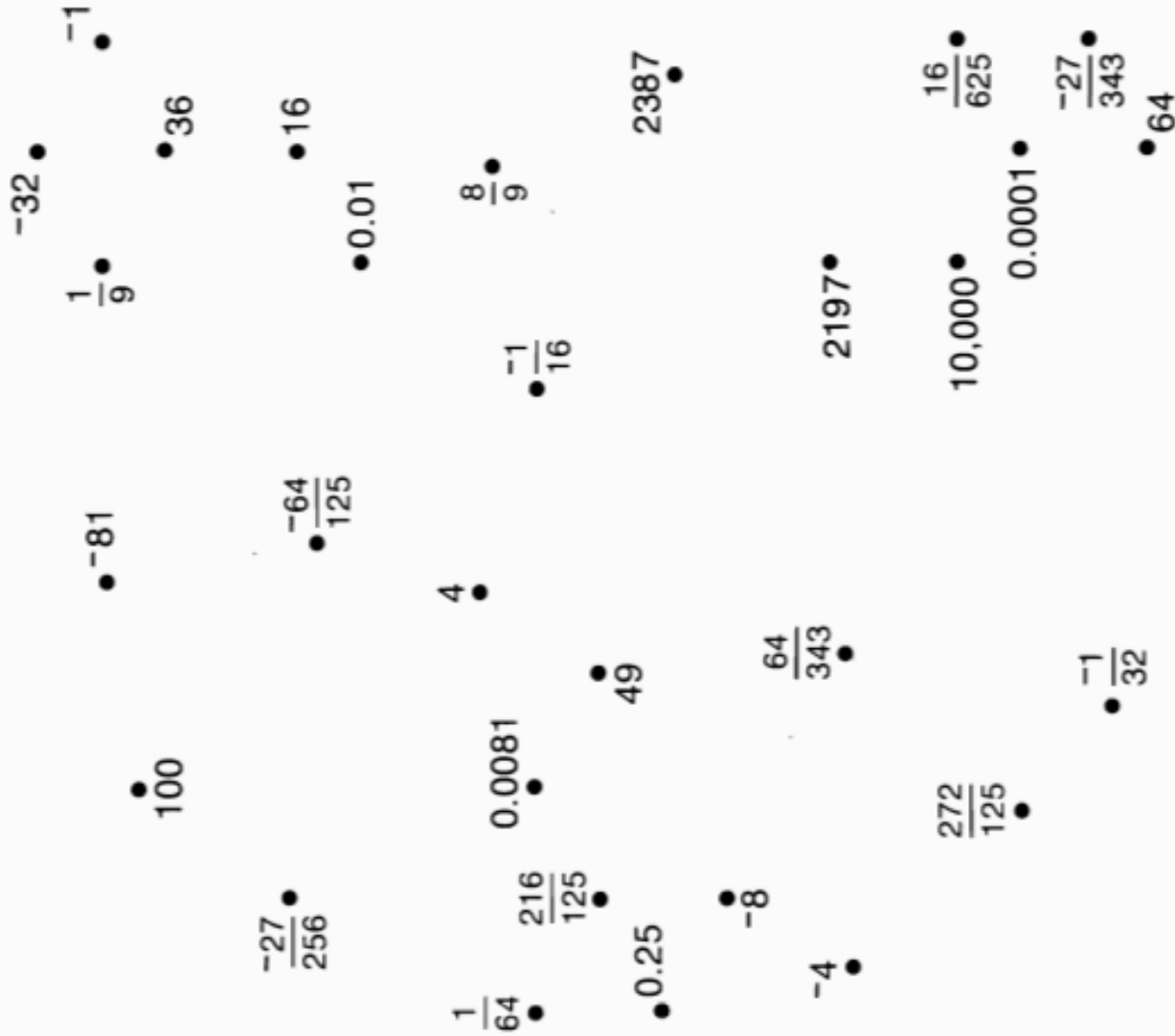


Can You Build This?



DIRECTIONS:

Figure out the value of each expression below and find it next to a dot. Connect the dots in the same order as the exercises are numbered. Be careful to lift your pencil and begin again each time you see the instruction "LIFT PENCIL."

YOU WILL CREATE AN INTERESTING STRUCTURE. CAN YOU BUILD IT?

① 7^2

② 2^4

③ $(-6)^2$

④ $\left(\frac{1}{3}\right)^2$

Lift Pencil

① $(-2)^3$

② $(0.5)^2$

③ $\left(\frac{1}{4}\right)^3$

④ $(-10)^4$

⑤ $(0.1)^2$

Lift Pencil

① $(-2)^6$

② $(-8)^1$

③ $\left(\frac{6}{5}\right)^3$

④ $(0.3)^4$

Lift Pencil

① $\left(\frac{-4}{25}\right)^2$

② $\left(\frac{-3}{7}\right)^3$

③ 4^3

④ $(0.01)^2$

⑤ $(-100)^2$

Lift Pencil

① $(-1)^7$

② $\left(\frac{2}{5}\right)^4$

③ $(-0.1)^4$

④ 16^1

Lift Pencil

① 13^3

② $(-0.09)^2$

③ $(-1)^{19}$

④ $(-2)^5$

⑤ $\left(\frac{1}{8}\right)^2$

Stop



Why Was the Engineer Driving the Train Backwards?



Find the missing factor in each exercise below. Find your answer in the set of answers to the right of that exercise. Write the letter next to your answer in the box containing the number of that exercise.

$$\textcircled{1} \quad x^8 = (x^5)(\underline{\hspace{2cm}})$$

$$\textcircled{T} \quad 4x^5$$

$$\textcircled{N} \quad x^6$$

$$\textcircled{2} \quad 24x^5 = (6x^2)(\underline{\hspace{2cm}})$$

$$\textcircled{A} \quad -5x^5$$

$$\textcircled{O} \quad 4x^3$$

$$\textcircled{3} \quad -12x^4 = (3x^3)(\underline{\hspace{2cm}})$$

$$\textcircled{H} \quad x^3$$

$$\textcircled{R} \quad -4x^8$$

$$\textcircled{4} \quad 20x^7 = (-4x^2)(\underline{\hspace{2cm}})$$

$$\textcircled{E} \quad -5x^3$$

$$\textcircled{I} \quad -4x$$

$$\textcircled{5} \quad a^5b^8 = (a^2b^3)(\underline{\hspace{2cm}})$$

$$\textcircled{P} \quad a^2b^2$$

$$\textcircled{E} \quad a^3b^5$$

$$\textcircled{6} \quad 4a^2b^6 = (2ab^2)(\underline{\hspace{2cm}})$$

$$\textcircled{V} \quad 5a^3b^3$$

$$\textcircled{A} \quad -12a^2b^4$$

$$\textcircled{7} \quad -15a^7b^4 = (-3a^4b)(\underline{\hspace{2cm}})$$

$$\textcircled{L} \quad 2ab^7$$

$$\textcircled{H} \quad -12a^5b$$

$$\textcircled{8} \quad 72a^{10}b^3 = (-6a^5b^2)(\underline{\hspace{2cm}})$$

$$\textcircled{O} \quad 2ab^4$$

$$\textcircled{K} \quad 5a^5b^3$$

$$\textcircled{9} \quad x^5y^3 = (x^2)(\underline{\hspace{2cm}})$$

$$\textcircled{V} \quad -3y^4$$

$$\textcircled{O} \quad 3x^2y^6$$

$$\textcircled{10} \quad -6x^2y^7 = (-2y)(\underline{\hspace{2cm}})$$

$$\textcircled{L} \quad -2x^7$$

$$\textcircled{T} \quad 3x^2y^3$$

$$\textcircled{11} \quad 14x^9y^6 = (-7x^2y^6)(\underline{\hspace{2cm}})$$

$$\textcircled{S} \quad -2x^6y$$

$$\textcircled{A} \quad x^3y^3$$

$$\textcircled{12} \quad 27x^4y^3 = (9x^4y)(\underline{\hspace{2cm}})$$

$$\textcircled{B} \quad x^2y^4$$

$$\textcircled{E} \quad 3y^2$$

$$\textcircled{13} \quad -3u^4v^2 = (u^2v)(\underline{\hspace{2cm}})$$

$$\textcircled{R} \quad -2uv^6$$

$$\textcircled{R} \quad -3u^2v^4$$

$$\textcircled{14} \quad 32uv^5 = (-16v^2)(\underline{\hspace{2cm}})$$

$$\textcircled{M} \quad 11v^2$$

$$\textcircled{C} \quad -3u^2v^{11}$$

$$\textcircled{15} \quad 121u^2v^3 = (11u^2v)(\underline{\hspace{2cm}})$$

$$\textcircled{P} \quad 11uv^3$$

$$\textcircled{E} \quad 3u^2v^6$$

$$\textcircled{16} \quad -6u^3v^{12} = (2uv)(\underline{\hspace{2cm}})$$

$$\textcircled{T} \quad -3u^2v$$

$$\textcircled{D} \quad -2uv^3$$

8

12

1

9

14

4

11

2

16

6

15

10

13

3

7

5

WHY ARE MR AND MRS. NUMBER SO HAPPY?

Find the simplest form for each expression below in the adjacent answer column. The letter of the exercise goes in the box that contains the number of the corresponding answer.

- | | | | |
|-----------------------------|--------------|----------------------------------|-----------------|
| (E) $x^3 \cdot x^4$ | (19) $-3x^6$ | (T) $(u^2v)(-6uv^2)$ | (21) $-8u^6v^4$ |
| (O) $3x^2 \cdot x$ | (14) $3x^3$ | (E) $v(uv^2)(u^3v)$ | (3) u^4v^4 |
| (T) $2x^2 \cdot 3x$ | (25) x^9 | (I) $(4uv)(-u)(2u^4v)$ | (12) $-8u^6v^2$ |
| (I) $x \cdot x^2 \cdot x^3$ | (7) x^7 | (A) $(-3u^2)(-u^2v^2)(2uv)$ | (17) u^3v^7 |
| (A) $x^4(-3x^2)$ | (10) x^6 | (L) $(-u^2)(-6u^2v^3)(-u^3v^4)$ | (5) $6u^5v^3$ |
| (H) $(-2x^2)(-2x)$ | (2) $4x^3$ | (G) $(-2u)(u^2v)(4u^3v^3)$ | (13) $-6u^3v^3$ |
| (E) $x(-x^4)(-x^4)$ | (23) $6x^3$ | (V) $(\frac{1}{2}u^2v^3)(2uv^4)$ | (24) $-6u^7v^7$ |

- | | | | |
|-------------------------|------------------|----------------------------------|-------------------|
| (R) $(ab^2)(a^2b)$ | (18) $5a^6b^4$ | (L) $(-b^2)(9a^2b^3)$ | (22) $-a^3b^5c^2$ |
| (A) $(3ab)(2a^3b)$ | (6) a^3b^3 | (Y) $(3a^2c)(-3bc^2)$ | (27) $-ab^3c^2$ |
| (G) $ab(-4ab^3)$ | (26) $12a^2b^8$ | (E) $c(-ab)(a^2b^2c^2)$ | (28) $-a^3b^3c^3$ |
| (E) $(-a^4b)(-5a^2b^3)$ | (8) $-4a^2b^4$ | (O) $(-3a^2c)(-3b^2c)$ | (15) $9a^3b^3c^5$ |
| (T) $(-2a^3b)(2ab^3)$ | (11) $-12a^3b^7$ | (T) $(-ab)(-b^2c^2)(-a^2b^2)$ | (4) $-9a^2bc^3$ |
| (N) $(6a^2b^2)(-2ab^5)$ | (1) $-4a^4b^4$ | (H) $(a^2bc^2)(b^2c^3)(9a)$ | (20) $-9a^2b^5$ |
| (O) $(-4ab^4)(-3ab^4)$ | (16) $6a^4b^2$ | (N) $(3b^2)(\frac{1}{3}abc)(-c)$ | (9) $9a^2b^2c^2$ |

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
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Daffynition Decoder

1. HAUNTED HOUSE:

10^{-11} 10^{-4} 10^3 10^4 10^{-2} 10^{-3} 10^0 10^{-6} 10^{-8} 10^{-11} 10^{-4} 10^{-3} 10^4

2. SUIT OF ARMOR:

10^{-7} 10^{-4} 10^5 10^{-13} 10^{-5} 10^7 10^{-13} 10^{-3} 10^6 10^{-4}

3. CENTIMETER:

10^9 10^4 10^3 10^{-11} 10^7 10^{-5} 10^{-11} 10^{-4} 10^{-11} 10^2 10^{12} 10^{-1} 10^3 10^4

TO DECODE THESE THREE DAFFYNTIONS:

Write any expression below as a single power of 10. Each time your answer appears in the code, write the letter of that exercise above it.

KEEP WORKING AND YOU WILL DECODE THREE DE-FUN-ITIONS.

Ⓦ $10^{-2} \cdot 10^8 =$

Ⓐ $10^{-4} \cdot 10^{-7} =$

Ⓘ $\frac{1}{1000} \cdot 10^8 =$

Ⓩ $10 \cdot \frac{1}{100} =$

ⓐ $\frac{1}{10} \cdot \frac{1}{100} =$

Ⓢ $\frac{1}{1,000,000} =$

Ⓛ $10^9 \div 10^7 =$

ⓗ $10 \div 10^6 =$

Ⓤ $\frac{10^{-2}}{10^{-2}} =$

Ⓚ $\frac{1}{10,000} \div 1000 =$



Ⓔ $\frac{1}{100} \div \frac{1}{100,000} =$

Ⓑ $1,000,000,000 =$

Ⓜ $\frac{1}{100,000} \cdot \frac{1}{1000} =$

Ⓨ $10^8 \div \frac{1}{10,000} =$

Ⓥ $10^6 \cdot 10^{-8} =$

Ⓣ $\frac{10^3}{10^{-4}} =$

Ⓓ $10^{-10} \cdot \frac{1}{1000} =$

Ⓡ $1000 \div \frac{1}{10} =$

Ⓝ $\frac{1}{10^4} =$

Why Are Babies Like Hinges ?

Simplify each expression below and find your answer in the set of answers to the right of that exercise. Write the letter of your answer in the box that contains the number of that exercise.

$$\textcircled{1} \frac{n^9}{n^5}$$

$$\textcircled{3} \frac{2n^4}{n}$$

$$\textcircled{A} 2n^6$$

$$\textcircled{E} 2n^3$$

$$\textcircled{H} n^9$$

$$\textcircled{T} n^4$$

$$\textcircled{2} \frac{n^{12}}{n^3}$$

$$\textcircled{4} \frac{6n^2}{3n^5}$$

$$\textcircled{R} \frac{2}{n^6}$$

$$\textcircled{Y} \frac{2}{n^3}$$

$$\textcircled{5} \frac{x^3y^4}{x^2y}$$

$$\textcircled{7} \frac{8xy^2}{12x^3y^5}$$

$$\textcircled{R} -4x^3$$

$$\textcircled{A} xy^3$$

$$\textcircled{S} -4y^4$$

$$\textcircled{T} -4y^7$$

$$\textcircled{6} \frac{-8x^6y^2}{2x^3y^2}$$

$$\textcircled{8} \frac{20x^3y^8}{-5x^3y}$$

$$\textcircled{E} \frac{2}{3x^2y^3}$$

$$\textcircled{U} \frac{2}{3xy^4}$$

$$\textcircled{9} \frac{3a^5b^2}{9a^2b^5}$$

$$\textcircled{11} \frac{-24a^2b}{18ab^5}$$

$$\textcircled{I} 5ab^8$$

$$\textcircled{A} 15a^2$$

$$\textcircled{L} 5ab^6$$

$$\textcircled{G} 15a^3$$

$$\textcircled{10} \frac{-15a^2b^9}{-3ab}$$

$$\textcircled{12} \frac{30a^9b^2}{2a^6b^2}$$

$$\textcircled{N} -\frac{4a}{3b^4}$$

$$\textcircled{H} \frac{a^3}{3b^3}$$

$$\textcircled{13} \frac{8u^4v^{10}}{-2u^2v^8}$$

$$\textcircled{15} \frac{-7u^2v^6}{uv^3}$$

$$\textcircled{B} -7uv^5$$

$$\textcircled{S} -4u^2v^2$$

$$\textcircled{O} -7uv^3$$

$$\textcircled{E} -4u^7v^2$$

$$\textcircled{14} \frac{13u^7v^7}{26u^7v}$$

$$\textcircled{16} \frac{-9u^8v^2}{-6u^2v^6}$$

$$\textcircled{T} \frac{v^6}{2}$$

$$\textcircled{A} \frac{3u^6}{2v^4}$$

$$\textcircled{17} \frac{14k^9m^3}{2km^3}$$

$$\textcircled{19} \frac{-3k^5m^6}{k^4m^3}$$

$$\textcircled{E} -3k$$

$$\textcircled{L} 7k^6m$$

$$\textcircled{D} 7k^8$$

$$\textcircled{R} -3km^3$$

$$\textcircled{18} \frac{4k^2m^2}{16k^5m^3}$$

$$\textcircled{20} \frac{12km^3}{-4m^3}$$

$$\textcircled{O} \frac{1}{4k^3m}$$

$$\textcircled{N} \frac{1}{4km^2}$$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----

Did You Hear About...

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

DIRECTIONS: Write any fraction or mixed numeral below as a decimal numeral. Find this decimal in one of the answer columns and notice the word next to it. Write this word in the box that has the same letter as the exercise.

KEEP WORKING AND YOU WILL HEAR ABOUT A REAL FRAME-UP!

1.000973—AND
 -0.087—CHAIR
 61.8—PLUMBER
 61.08—EYE
 14.0605—GRINDING
 -0.00065—SIX
 0.043201—OF
 -500.06—SO
 0.9—THE
 -0.4954—HIS
 0.43201—OUT
 -500.6—INTO
 1.00973—FOR
 -0.775—DOCTOR
 14.00605—CASE
 -0.000065—A

(A) $\frac{9}{10} =$
 (D) $61\frac{8}{100} =$
 (G) $77\frac{5}{1000} =$
 (J) $\frac{-87}{10,000} =$
 (M) $1\frac{973}{1,000,000} =$
 (P) $6\frac{5}{10,000} =$

(B) $-3\frac{7}{10} =$
 (E) $\frac{-775}{1000} =$
 (H) $-500\frac{6}{10} =$
 (K) $14\frac{605}{10,000} =$
 (N) $18\frac{2001}{100,000} =$
 (Q) $\frac{43,201}{1,000,000} =$

(C) $\frac{-37}{100} =$
 (F) $\frac{84}{1000} =$
 (I) $\frac{-4954}{10,000} =$
 (L) $\frac{-4}{100,000} =$
 (O) $\frac{-65}{1,000,000} =$
 (R) $-9\frac{7}{1000} =$

-0.00004—MACHINE
 -0.04954—HOT
 77.005—FELL
 -3.7—ABSENT
 18.02001—MADE
 18.2001—THAT
 0.084—WHO
 0.84—TO
 -9.007—HIMSELF
 -0.037—TEACHER
 -0.37—MINDED
 -0.0004—BIG
 -0.0087—LENS
 6.005—VERY
 -9.0007—THEN
 6.0005—SPECTACLE

How Did Slugger McFist Get A BLACK EYE?

TO ANSWER THIS QUESTION: Express any quotient below as a decimal numeral and find this numeral in the code key. Notice the letter next to it. Print this letter in the box at the bottom of the page that contains the exercise number. Keep working and you will discover the answer to the title question.

- ① $10^5 \div 10^2 =$
 ② $10^2 \div 10^5 =$
 ③ $10^{-6} \div 10^2 =$
 ④ $10^{-1} \div 10^{-3} =$
 ⑤ $10^2 \div 10^{-7} =$
 ⑥ $10^6 \div 10 =$
 ⑦ $10^{-3} \div 10^{-3} =$

- ⑧ $\frac{10}{10^4} =$
 ⑨ $\frac{10^{-5}}{10^5} =$
 ⑩ $\frac{10^{10}}{10^{20}} =$
 ⑪ $\frac{10}{10^{-1}} =$
 ⑫ $\frac{10^{-2}}{10} =$
 ⑬ $\frac{10^{-8}}{10^{-9}} =$
 ⑭ $\frac{10^4}{10^{-3}} =$
 ⑮ $\frac{10^{-5}}{10^3} =$
 ⑯ $\frac{10^4}{10^6} =$
 ⑰ $\frac{10^{-2}}{10^{-1}} =$
 ⑱ $\frac{10}{10^{-2}} =$
 ⑲ $\frac{10^3}{10^3} =$
 ⑳ $10^{15} \div 10^{14} =$
 ㉑ $10^{-5} \div 10 =$
 ㉒ $10^{-7} \div 10^{-3} =$
 ㉓ $10 \div 10^6 =$

CODE KEY

0.000000001	U
0.00000001	I
0.000001	C
0.00001	M
0.0001	G
0.001	E
0.01	W
0.1	T
1	D
10	H
100	A
1000	S
100,000	L
10,000,000	B
1,000,000,000	Y

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