

# Dividing Radicals

## Codebreaker

A	B	C	D	E	F	G	H	I	J	K	L	M
9	6	2	$\sqrt{6}$	3	$\frac{\sqrt{5}}{\sqrt{2}}$	$\sqrt{2}$	$\sqrt{18}$	$3\sqrt{2}$	7	$\sqrt{3}$	$\frac{1}{2}$	$\sqrt{7}$
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$\sqrt{5}$	$2\sqrt{5}$	8	$\frac{\sqrt{2}}{\sqrt{5}}$	$\frac{3}{5}$	$\frac{1}{16}$	5	$\frac{5}{3}$	1	$5\sqrt{7}$	$\frac{1}{2}$	$5\sqrt{3}$	18

Work out the questions below. Match your answer to a letter in the table above to complete the code in the five boxes at the bottom.

1  $\frac{\sqrt{10}}{\sqrt{2}}$       2  $\frac{\sqrt{15}}{\sqrt{6}}$       3  $\frac{\sqrt{12}}{\sqrt{3}}$       4  $\sqrt{15} \div \sqrt{5}$       5  $\sqrt{2} \div \sqrt{2}$

6  $\sqrt{21} \div \sqrt{3}$       7  $3\sqrt{28} \div \sqrt{7}$       8  $\sqrt{48} \div \sqrt{8}$       9  $\frac{3\sqrt{18}}{\sqrt{2}}$       10  $\frac{48\sqrt{27}}{8\sqrt{3}}$

11  $\frac{\sqrt{10}\sqrt{32}}{\sqrt{5}}$       12  $\frac{\sqrt{14}\sqrt{7}}{\sqrt{2}}$       13  $\frac{\sqrt{35}\sqrt{5}}{\sqrt{7}}$       14  $\sqrt{\frac{1}{4}}$       15  $\sqrt{\frac{9}{25}}$



1

2

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14

15



# SOLUTION

## Dividing Radicals Codebreaker

A	B	C	D	E	F	G	H	I	J	K	L	M
9	6	2	$\sqrt{6}$	3	$\frac{\sqrt{5}}{\sqrt{2}}$	$\sqrt{2}$	$\sqrt{18}$	$3\sqrt{2}$	7	$\sqrt{3}$	$\frac{1}{2}$	$\sqrt{7}$
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$\sqrt{5}$	$2\sqrt{5}$	8	$\frac{\sqrt{2}}{\sqrt{5}}$	$\frac{3}{5}$	$\frac{1}{16}$	5	$\frac{5}{3}$	1	$5\sqrt{7}$	$\frac{1}{2}$	$5\sqrt{3}$	18

Work out the questions below. Match your answer to a letter in the table above to complete the code in the five boxes at the bottom.

- 1  $\frac{\sqrt{10}}{\sqrt{2}}$   
 $\sqrt{5}$
- 2  $\frac{\sqrt{15}}{\sqrt{6}}$   
 $\frac{\sqrt{5}}{\sqrt{2}}$
- 3  $\frac{\sqrt{12}}{\sqrt{3}}$   
2
- 4  $\sqrt{15} \div \sqrt{5}$   
 $\sqrt{3}$
- 5  $\sqrt{2} \div \sqrt{2}$   
1
- 6  $\sqrt{21} \div \sqrt{3}$   
 $\sqrt{7}$
- 7  $3\sqrt{28} \div \sqrt{7}$   
6
- 8  $\sqrt{48} \div \sqrt{8}$   
 $\sqrt{6}$
- 9  $\frac{3\sqrt{18}}{\sqrt{2}}$   
9
- 10  $\frac{48\sqrt{27}}{8\sqrt{3}}$   
18
- 11  $\frac{\sqrt{10}\sqrt{32}}{\sqrt{5}}$   
8
- 12  $\frac{\sqrt{14}\sqrt{7}}{\sqrt{2}}$   
7
- 13  $\frac{\sqrt{35}\sqrt{5}}{\sqrt{7}}$   
5
- 14  $\sqrt{\frac{1}{4}}$   
 $\frac{1}{2}$
- 15  $\sqrt{\frac{9}{25}}$   
 $\frac{3}{5}$



N-F-C

K-V-M

B-D-A

Z-P-J

T-L-R



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## MULTIPLYING EXPONENTS

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**Multiplying Exponents Code Breaker**

**Multiplying Monomials Codebreaker**

A	B	C	D	E	F	G	H	I	J	K	L	M
$a^2$	$a^3$	$10a$	$15a^2$	$a^4$	$a^5$	$a^6$	$23a^2$	$a^7$	$13a^3$	$20a^2$	$8a^2$	$a^8$
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$a^2$	$a^3$	$20a^2$	$a^4$	$a^5$	$8a$	$a^6$	$10a^2$	$32a^2$	$a^7$	$a^8$	$a^9$	$10a^2$

Match your answer to a letter in the table above to complete the code in the five boxes at the bottom.

1.  $(a^2)^3$   
2.  $100a^3$   
3.  $(a^3)^2$   
4.  $(a^2)^3(a^2)^2$   
5.  $(a^2)^3(a^2)^2$

6.  $(1a^2)(5a^2)$   
7.  $(2a^2)(5a^2)$   
8.  $(1a^2)(4a^2)$   
9.  $(10a^2)(5a^2)$   
10.  $20a^2(a^2)^2$

11.  $4(a^2)^3(a^2)^2$   
12.  $(a^2)^3$   
13.  $32a^2$   
14.  $(10a^2)^2$   
15.  $(a^2)^3(a^2)^2$

**T-M-Q B-O-D Z-H-K P-J-A V-R-N**

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## DIVISION OF MONOMIALS ACTIVITY

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**Dividing Monomials Code Breaker**

**Dividing Monomials Codebreaker**

A	B	C	D	E	F	G	H	I	J	K	L	M
$10a^2$	$2a^2$	$a^2$	$2a^2$	$a^2$	$a^2$	$a^2$	$a^2$	$a^2$	$2a^2$	$10a^2$	$a^2$	$10a^2$
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$10a^2$	$a^2$	$a^2$	$10a^2$	$a^2$	$a^2$	$10a^2$	$a^2$	$a^2$	$10a^2$	$a^2$	$a^2$	$10a^2$

Match your answer to a letter in the table above to complete the code in the five boxes at the bottom.

1.  $\frac{a^2}{a^2}$   
2.  $\frac{a^2}{a^2}$   
3.  $\frac{a^2}{a^2}$   
4.  $\frac{a^2}{a^2}$   
5.  $\frac{a^2}{a^2}$

6.  $\frac{10a^2}{10a^2}$   
7.  $\frac{10a^2}{10a^2}$   
8.  $\frac{a^2}{a^2}$   
9.  $\frac{a^2}{a^2}$   
10.  $\frac{10a^2}{10a^2}$

11.  $\frac{2a^2}{a^2}$   
12.  $\frac{10a^2}{10a^2}$   
13.  $\frac{10a^2}{10a^2}$   
14.  $\frac{10a^2}{10a^2}$   
15.  $\frac{10a^2}{10a^2}$

**F-L-P C-Z-J A-W-E T-X-H N-R-D**

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## MULTIPLYING ROOTS

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**Multiplying Roots Code Breaker**

**Products of Roots Codebreaker**

A	B	C	D	E	F	G	H	I	J	K	L	M
54	$8\sqrt{2}$	$2\sqrt{2}$	9	$\sqrt{2}$	25	$\sqrt{2}$	$8\sqrt{2}$	12	$16\sqrt{2}$	$20\sqrt{2}$	6	35
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$\sqrt{2}$	25	$8\sqrt{2}$	4	$\sqrt{2}$	$4\sqrt{2}$	$2\sqrt{2}$	$\sqrt{2}$	36	$8\sqrt{2}$	9	$2\sqrt{2}$	48

Match your answer to a letter in the table above to complete the code in the five boxes at the bottom.

1.  $\sqrt{2} \times \sqrt{2}$   
2.  $\sqrt{3} \times \sqrt{3}$   
3.  $\sqrt{3} \times \sqrt{3}$   
4.  $\sqrt{2} \times \sqrt{2}$   
5.  $\sqrt{2} \times \sqrt{2}$

6.  $\sqrt{2} \times \sqrt{2}$   
7.  $2\sqrt{2} \times 2\sqrt{2}$   
8.  $4\sqrt{2} \times 2\sqrt{2}$   
9.  $6\sqrt{2} \times 2\sqrt{2}$   
10.  $\sqrt{2} \times \sqrt{2} \times \sqrt{2}$

11.  $2\sqrt{2} \times 2\sqrt{2}$   
12.  $2\sqrt{2} \times 2\sqrt{2}$   
13.  $2\sqrt{2} \times 2\sqrt{2}$   
14.  $\sqrt{2} \times \sqrt{2} \times \sqrt{2}$   
15.  $2\sqrt{2} \times 4\sqrt{2}$

**G-N-X Q-L-D V-K-B P-A-J F-I-Z**

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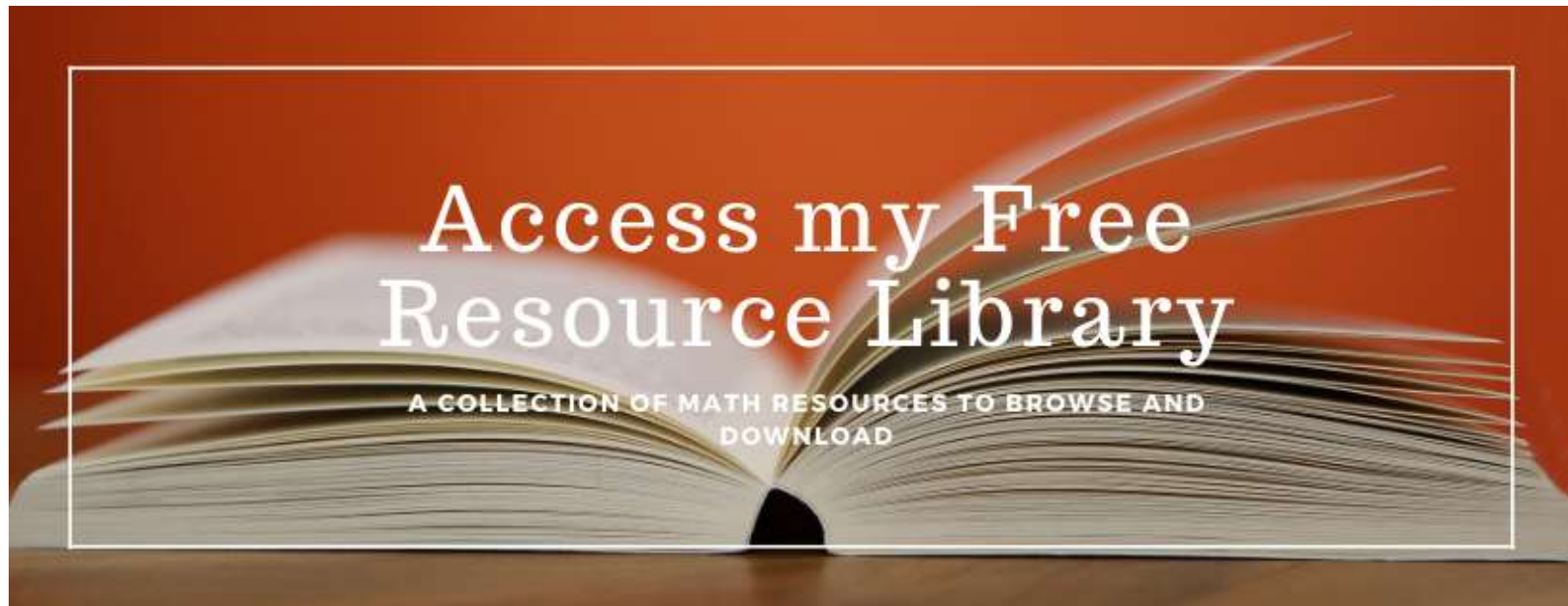
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Puzzle

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## Multiplying Decimals CODE BREAKER GAME

### Multiplying Decimals Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
2.302	0.547	15.8	1.033	0.476	3.88	6.103	1.08	1.442	0.707	0.12	0.63	0.018
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1.23	0.0416	0.779	4.23	8.57	3.146	12.4	16.2	5.4	0.0057	49	0.086	0.573

Work out the decimal multiplications, link your answers to the table above to complete the code in the four boxes at the bottom.

1  $9.2 \times 5$   
46

2  $3.6 \times 4$   
14.4

3  $7.9 \times 2$   
15.8

4  $0.4 \times 0.3$   
0.12

5  $0.7 \times 0.9$   
0.63

6  $0.03 \times 0.6$   
0.0018

7  $0.05 \times 0.07$   
0.0035

8  $3.6 \times 0.3$   
1.08

9  $7.4 \times 0.006$   
0.0444

10  $8.7 \times 7.9$   
68.73

11  $0.14 \times 3.4$   
0.476

12  $0.74 \times 0.24$   
0.1776

X-T-C K-L-M W-H-O Z-E-P

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[Multiplying Decimals](#)

## GCF and LCM CODE BREAKER GAME

### GCF and LCM Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
3	7	25	12	11	34	39	45	69	14	16	29	31
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
55	150	84	15	9	10	30	66	6	13	19	0	8

Find the GCF or LCM for these questions, link them to the table above to complete the code in the four boxes at the bottom.

1 GCF of 18 and 30  
6

2 GCF of 25 and 60  
5

3 GCF of 36 and 90  
18

4 LCM of 8 and 12  
24

5 LCM of 10 and 60  
60

6 GCF of 16, 32 and 40  
8

7 LCM of 21 and 28  
84

8 LCM of 2, 6 and 11  
66

9 GCF of 36, 60 and 84  
12

10 GCF of 75 and 350  
25

11 LCM of 50 and 75  
150

12 GCF of 39 and 52  
13

V-A-X F-I-Z P-U-D C-O-W

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[GCF LCM](#)

## PRIME FACTOR FORM CODE BREAKER GAME

### Prime Number Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
2	3	5	7	11	13	17	19	23	29	31	37	41
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
43	47	53	59	67	71	73	79	83	89	97	101	103

Write the numbers below as a product of primes, link them to the table above to complete the code in the four boxes at the bottom.

1 140  
 $2^2 \times 5 \times 7$

2 168  
 $2^3 \times 3 \times 7$

3 550  
 $2 \times 5^2 \times 11$

4 210  
 $2 \times 3 \times 5 \times 7$

5 336  
 $2^4 \times 3 \times 7$

6 2625  
 $3 \times 5^3 \times 7$

7 306  
 $2 \times 3^3 \times 17$

8 735  
 $3 \times 5 \times 7^2$

9 1144  
 $2^3 \times 11 \times 13$

10 396  
 $2^2 \times 3^2 \times 11$

11 6006  
 $2 \times 3 \times 7 \times 11 \times 13$

12 484  
 $2^2 \times 11^2$

Z-O-M B-A-G L-I-D X-E-C

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[Prime Factors](#)

## Multiplying Integers CODE BREAKER GAME

### Multiplying Integers Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
196	192	170	292	258	358	122	360	144	244	107	178	204
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
498	138	266	145	364	286	272	440	68	254	81	118	606

Simplify the expressions above, link them to the answers in the table above to complete the code in the four boxes at the bottom.

1  $3 \times 27$   
81

2  $6 \times 43$   
258

3  $2 \times 89$   
178

4  $5 \times 34$   
170

5  $3 \times 66$   
198

6  $4 \times 73$   
292

7  $2 \times 96$   
192

8  $7 \times 52$   
364

9  $6 \times 23$   
138

10  $6 \times 83$   
498

11  $8 \times 18$   
144

12  $7 \times 38$   
266

X-E-L C-A-D B-R-O N-I-P

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[Multiplying Integers](#)

## Add & Subtract Decimals CODE BREAKER GAME

### Adding & Subtracting Decimals Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
14.24	2.69	17.31	3.1	13.84	41.3	19.34	0.76	9.83	6.66	15.14	14.57	17.08
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
14.21	2.908	1.79	4.11	9.71	9.87	2.65	18.11	3.6	24.79	40.29	12.66	10.17

Work out the decimal sums below, link your answers to the table above to complete the code in the four boxes at the bottom.

1  $10.63 + 6.7$   
17.33

2  $3.271 + 6.1$   
9.371

3  $0.668 + 3.04$   
3.708

4  $2.472 + 16.7$   
19.172

5  $14.52 - 6.5$   
8.02

6  $46.5 - 6.21$   
40.29

7  $6.73 - 0.124$   
6.606

8  $4.83 + 9.74$   
14.57

9  $3.33 - 2.46$   
0.87

10  $2.75 + 11.46$   
14.21

11  $6.72 - 4.93$   
1.79

12  $4.8 - 0.69$   
4.11

C-R-M Z-I-X J-L-S N-P-Q

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[Add Subtract Decimals](#)

## Percentage of an Amount CODE BREAKER GAME

### Percentage of a Quantity Codebreaker

A	B	C	D	E	F	G	H	I	J	K	L	M
66	87	3.5	88	40	348	175	30	28	360	56	12	189
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
100.4	100	217	13	55	246	78	198	60	86	12	22	11

Answer each question, simplify where possible. Where relevant, leave your answer as an improper fraction. Link your answer to the table above to complete the code in the four boxes at the bottom.

1 50% of 24  
12

2 25% of 120  
30

3 80% of 450  
360

4 35% of 620  
217

5 15% of 440  
66

6 27% of 700  
189

7 11% of 800  
88

8 5% of 260  
13

9 80% of 70  
56

10 65% of 120  
78

11 2% of 140  
2.8

12 56% of 340  
190.4

13 2.5% of 7000  
175

14 33% of 600  
198

15 40% of 150  
60

X-H-J P-A-M D-Q-K T-I-N G-U-V


Codebreaker Game Ten Tors Math

[Percentage of an Amount](#)



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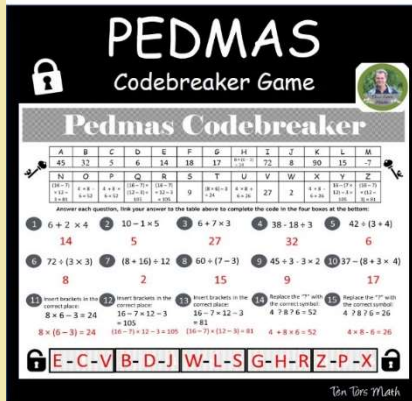
[Doubling & Halving Game](#)

### Fractions - the four operations



[Fractions Puzzle](#)

### PEDMAS Codebreaker Game



**Pedmas Codebreaker**

A	B	C	D	E	F	G	H	I	J	K	L	M
45	32	5	6	14	18	17	10	73	8	90	15	-7
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
100	10	100	100	100	100	100	100	100	100	100	100	100

Answer each question, link your answer to the table above to complete the code in the four boxes at the bottom!

1  $6 + 2 \times 4 = 14$     2  $10 - 1 \times 5 = 5$     3  $6 + 7 \times 3 = 27$     4  $38 - 18 \div 3 = 32$     5  $42 \div (3 + 4) = 6$

6  $72 \div (3 \times 3) = 8$     7  $(8 + 16) \div 12 = 2$     8  $60 \div (7 - 3) = 15$     9  $45 \div 3 - 3 \times 2 = 9$     10  $37 - (8 + 3 \times 4) = 17$

11 Shortbread in the tin:  $5 \times 6 - 3 = 24$     12 Shortbread in the tin:  $36 - 7 \times 12 - 3 = 105$     13 Shortbread in the tin:  $100 - 71 + 12 - 3 = 105$     14 Shortbread in the tin:  $100 - 71 + 12 - 3 = 105$     15 Shortbread in the tin:  $100 - 71 + 12 - 3 = 105$

16 Replace the "1" with the correct symbol:  $4 \times 8 \div 6 = 26$


17 Replace the "1" with the correct symbol:  $4 \times 8 \div 6 = 26$

**E - C - V | B - D - J | W - L - S | G - H - R - Z - P - X**

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[PEDMAS codebreaker activity](#)


### Fractions, Decimals and Percentages



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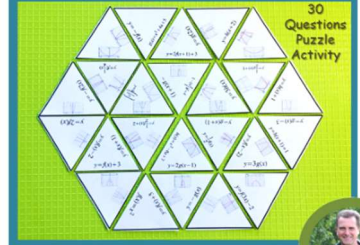


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**Quadratic Graph Transformations**

Graph Transformations Puzzle Activity




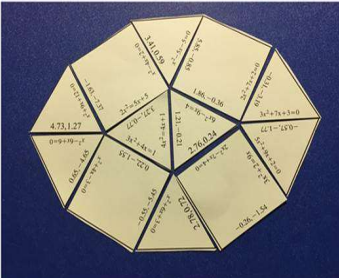
30 Questions  
Puzzle  
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**Puzzle**

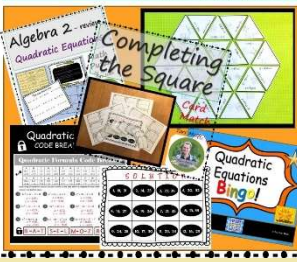
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