

Products of Roots

Codebreaker

A	B	C	D	E	F	G	H	I	J	K	L	M
54	$8\sqrt{14}$	$2\sqrt{6}$	9	$\sqrt{12}$	24	$\sqrt{6}$	$8\sqrt{6}$	12	$14\sqrt{15}$	$20\sqrt{15}$	6	15
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$\sqrt{35}$	25	$8\sqrt{3}$	4	$\sqrt{54}$	$4\sqrt{14}$	$3\sqrt{8}$	$\sqrt{18}$	36	$9\sqrt{15}$	3	$3\sqrt{2}$	48

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 $\sqrt{2} \times \sqrt{3}$ 2 $\sqrt{5} \times \sqrt{7}$ 3 $\sqrt{3} \times \sqrt{3}$ 4 $\sqrt{2} \times \sqrt{8}$ 5 $\sqrt{3} \times \sqrt{12}$
 6 $\sqrt{3} \times \sqrt{27}$ 7 $3\sqrt{2} \times 2\sqrt{18}$ 8 $4\sqrt{3} \times 5\sqrt{5}$ 9 $6\sqrt{2} \times 3\sqrt{7}$ 10 $\sqrt{2} \times \sqrt{3} \times \sqrt{32}$
 11 $3\sqrt{3} \times 3\sqrt{12}$ 12 $7\sqrt{3} \times 2\sqrt{5}$ 13 $2\sqrt{6} \times 2\sqrt{6}$ 14 $\sqrt{3} \times \sqrt{6} \times \sqrt{8}$ 15 $2\sqrt{2} \times 4\sqrt{18}$



1

2

3

4

5

6

7

8

9

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11

12

13

14

15



SOLUTION

Products of Roots Codebreaker

A	B	C	D	E	F	G	H	I	J	K	L	M
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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 | $\sqrt{2} \times \sqrt{3}$
$\sqrt{6}$ | 2 | $\sqrt{5} \times \sqrt{7}$
$\sqrt{35}$ | 3 | $\sqrt{3} \times \sqrt{3}$
3 | 4 | $\sqrt{2} \times \sqrt{8}$
4 | 5 | $\sqrt{3} \times \sqrt{12}$
6 |
| 6 | $\sqrt{3} \times \sqrt{27}$
9 | 7 | $3\sqrt{2} \times 2\sqrt{18}$
36 | 8 | $4\sqrt{3} \times 5\sqrt{5}$
$20\sqrt{15}$ | 9 | $6\sqrt{2} \times 3\sqrt{7}$
$8\sqrt{14}$ | 10 | $\sqrt{2} \times \sqrt{3} \times \sqrt{32}$
$8\sqrt{3}$ |
| 11 | $3\sqrt{3} \times 3\sqrt{12}$
54 | 12 | $7\sqrt{3} \times 2\sqrt{5}$
$14\sqrt{15}$ | 13 | $2\sqrt{6} \times 2\sqrt{6}$
24 | 14 | $\sqrt{3} \times \sqrt{6} \times \sqrt{8}$
12 | 15 | $2\sqrt{2} \times 4\sqrt{18}$
48 |



G-N-X

Q-L-D

V-K-B

P-A-J

F-I-Z



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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
a^2	a^3	$20a^2$	a^4	a^5	$8a^2$	a^6	$10a^2$	$12a^2$	a^7	a^8	a^9	$10a^2$

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

- $(a^2)(a^2)$
- $(10a)(a)$
- $(a^2)(a^3)$
- $(a^2)(a^2)(a^2)$
- $(a^2)(a^2)(a^2)$
- $(15a^2)(a^2)$
- $(2a^2)(5a^2)$
- $(7a^2)(3a^2)$
- $(10a^2)(a^2)(a^2)$
- $(20a^2)(a^2)(a^2)$
- $4a^2(a^2)(a^2)(a^2)$
- $12a^2(a^2)$
- $(a^2)(a^2)$
- $(a^2)(a^2)(a^2)$
- $(a^2)(a^2)(a^2)$

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

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QUOTIENTS OF ROOTS

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Dividing Radicals Code Breaker

Dividing Radicals Codebreaker

A	B	C	D	E	F	G	H	I	J	K	L	M
$\frac{4}{3}$	$\frac{2}{\sqrt{5}}$	$\frac{3}{\sqrt{2}}$	$\frac{5}{\sqrt{3}}$	$\frac{\sqrt{2}}{\sqrt{3}}$	$\frac{\sqrt{3}}{\sqrt{2}}$	$\frac{7}{\sqrt{3}}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{\sqrt{3}}$	$\frac{1}{\sqrt{5}}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{\sqrt{3}}$	$\frac{1}{\sqrt{5}}$
$\frac{4}{3}$	$\frac{2}{\sqrt{5}}$	$\frac{3}{\sqrt{2}}$	$\frac{5}{\sqrt{3}}$	$\frac{\sqrt{2}}{\sqrt{3}}$	$\frac{\sqrt{3}}{\sqrt{2}}$	$\frac{7}{\sqrt{3}}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{\sqrt{3}}$	$\frac{1}{\sqrt{5}}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{\sqrt{3}}$	$\frac{1}{\sqrt{5}}$

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.

- $\frac{\sqrt{18}}{\sqrt{4}}$
- $\frac{\sqrt{15}}{\sqrt{6}}$
- $\frac{\sqrt{12}}{\sqrt{3}}$
- $\frac{\sqrt{15} + \sqrt{5}}{\sqrt{5}}$
- $\frac{\sqrt{2} + \sqrt{2}}{\sqrt{2}}$
- $\frac{\sqrt{21} + \sqrt{3}}{\sqrt{3}}$
- $\frac{3\sqrt{28} + \sqrt{7}}{\sqrt{7}}$
- $\frac{\sqrt{48} + \sqrt{6}}{\sqrt{6}}$
- $\frac{3\sqrt{18}}{\sqrt{2}}$
- $\frac{16\sqrt{27}}{\sqrt{3}}$
- $\frac{\sqrt{15}\sqrt{3}}{\sqrt{5}}$
- $\frac{\sqrt{14}\sqrt{7}}{7}$
- $\frac{\sqrt{25}\sqrt{5}}{\sqrt{5}}$
- $\frac{1}{\sqrt{2}}$
- $\frac{1}{\sqrt{3}}$

N-F-C K-V-M B-D-A Z-P-J T-L-R

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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
$\frac{10a^2}{a^2}$	$\frac{2a^2}{a^2}$	$\frac{2a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$
$\frac{10a^2}{a^2}$	$\frac{2a^2}{a^2}$	$\frac{2a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$	$\frac{a^2}{a^2}$

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

- $\frac{a^2}{a^2}$
- $\frac{a^2}{a^2}$
- $\frac{a^2}{a^2}$
- $\frac{a^2}{a^2}$
- $\frac{a^2}{a^2}$
- $\frac{10a^2}{a^2}$
- $\frac{42a^2}{2a^2}$
- $\frac{a^2}{a^2}$
- $\frac{a^2}{a^2}$
- $\frac{50a^2}{a^2}$
- $\frac{2a^2}{a^2}$
- $\frac{a^2}{a^2}$
- $\frac{10a^2}{a^2}$
- $\frac{10a^2}{a^2}$
- $\frac{10a^2}{a^2}$

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

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POWERS AND EXPONENTS PUZZLE

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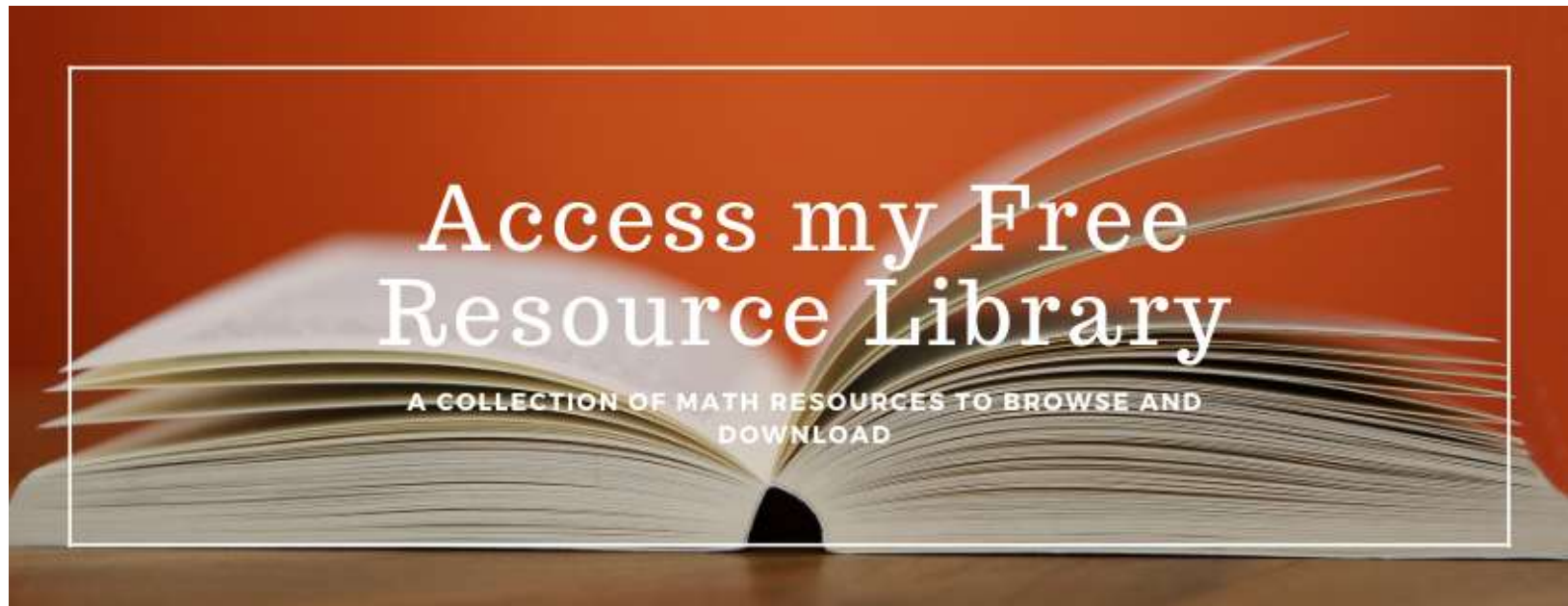
Powers & Exponents Puzzle

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	8.52	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:

- 9.2×5
46
- 3.6×4
14.4
- 7.9×2
15.8
- 0.4×0.3
0.12
- 0.7×0.9
0.63
- 0.03×0.6
0.0018
- 0.05×0.07
0.0035
- 3.6×0.3
1.08
- 7.4×0.006
0.0444
- 8.7×7.9
68.73
- 0.14×3.4
0.476
- 0.74×0.24
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:

- GCF of 18 and 30
6
- GCF of 25 and 60
5
- GCF of 36 and 90
18
- LCM of 8 and 12
24
- LCM of 10 and 60
60
- GCF of 16, 32 and 40
8
- LCM of 21 and 28
84
- LCM of 2, 6 and 11
66
- GCF of 36, 60 and 84
12
- GCF of 75 and 350
25
- LCM of 50 and 75
150
- 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
48	27	12	24	36	18	9	54	27	18	9	18	9

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:

- 140
 $2^2 \times 5 \times 7$
- 168
 $2^3 \times 3 \times 7$
- 550
 $2 \times 5^2 \times 11$
- 210
 $2 \times 3 \times 5 \times 7$
- 336
 $2^4 \times 3 \times 7$
- 2625
 $3 \times 5^3 \times 7$
- 306
 $2 \times 3^3 \times 17$
- 735
 $3 \times 5 \times 7^2$
- 1144
 $2^3 \times 11 \times 13$
- 396
 $2^2 \times 3^2 \times 11$
- 6006
 $2 \times 3 \times 7 \times 11 \times 13$
- 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
198	192	170	292	258	358	122	360	144	244	107	178	284
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:

- 3×27
81
- 6×43
258
- 2×89
178
- 5×34
170
- 3×66
198
- 4×73
292
- 2×96
192
- 7×52
364
- 6×23
138
- 6×83
498
- 8×18
144
- 7×38
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	9.26	8.82	6.66	15.14	14.57	17.08
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
14.21	2.98	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:

- $10.63 + 6.7$
17.33
- $3.271 + 6.1$
9.371
- $0.668 + 3.04$
3.708
- $2.472 + 16.7$
19.172
- $14.52 - 6.5$
8.02
- $46.5 - 6.21$
40.29
- $6.73 - 0.124$
6.606
- $4.83 + 9.74$
14.57
- $3.33 - 2.46$
0.87
- $2.75 + 11.46$
14.21
- $6.72 - 4.93$
1.79
- $4.8 - 0.69$
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:

- 50% of 24
12
- 25% of 120
30
- 80% of 450
360
- 35% of 620
217
- 15% of 440
66
- 27% of 700
189
- 11% of 800
88
- 5% of 260
13
- 80% of 70
56
- 65% of 120
78
- 2% of 140
2.8
- 56% of 340
190.4
- 2.5% of 7000
175
- 33% of 600
198
- 40% of 150
60

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

Codebreaker Game

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[Percentage of an Amount](#)

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Doubling and Halving



Bingo!
Game
by Ten Tors Math

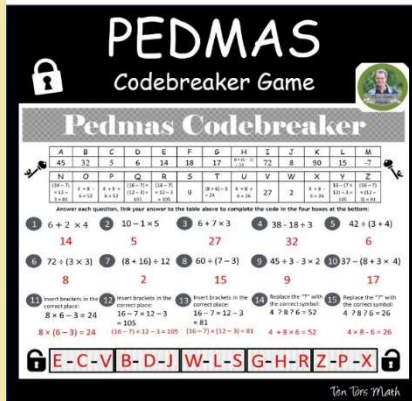
[Doubling & Halving Game](#)

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: $100 - 71 + 12 - 3 = 108$ 14 Shortbread in the tin: $100 - 71 + 12 - 3 = 108$ 15 Shortbread in the tin: $100 - 71 + 12 - 3 = 108$

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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Fractions & Decimals



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Percentage Increase & Decrease



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Spheres

Volume & Surface Area



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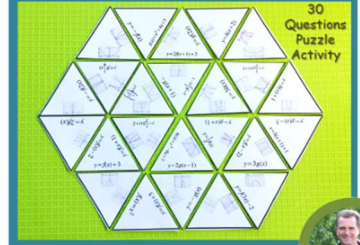
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Quadratic Graph Transformations

Graph Transformations Puzzle Activity



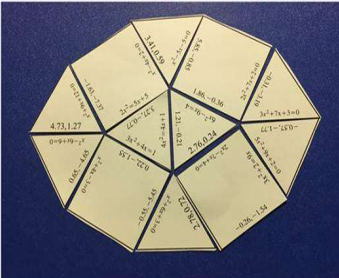
30 Questions
Puzzle Activity

Puzzle



[Quadratic Graph Transformations](#)

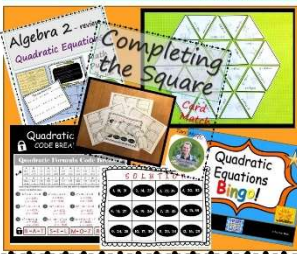
Using the Quadratic Formula to solve equations




The Quadratic Formula

Algebra 2

Quadratic Review Activities




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[Algebra 2 Quadratic Bundle](#)

Percentage Increase & Decrease




Task Cards
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Grades 7 to 10




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Completing the Square



Card Match
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[Completing the Square](#)