

Multiplying Monomials

Codebreaker

A	B	C	D	E	F	G	H	I	J	K	L	M
x^{15}	x^6y^2	$10x$	$15x^5$	x^8	x^{24}	x^6y	$21x^8$	x^4y^9	$12x^{16}y^{14}$	$20x^6y^8$	$8x^5$	x^9
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$x^{17}y^7$	x^4y^6	$20x^5y^{11}$	x^{10}	x^7y^9	$8x$	x^7	$10x^8$	$12x^6$	x^6y^6	x^9y^7	$x^{17}y^{12}$	$10x^{12}$

Multiply 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.

- 1 $(x^2)(x^5)$
- 2 $(x)(x^8)$
- 3 $(x^4)(x^6)$
- 4 $(x^2y)(x^4y)$
- 5 $(xy^3)(x^3y^3)$
- 6 $(3x^3)(5x^2)$
- 7 $(2x^4)(5x^8)$
- 8 $(7x^2)(3x^6)$
- 9 $(4xy)(5x^5y^7)$
- 10 $20(x^2y^3)(x^3y^8)$
- 11 $4(x^9y^3)(3x^7y^{11})$
- 12 $(x^3)^5$
- 13 $3(2x^3)^2$
- 14 $(x)(x^2y^3)^3$
- 15 $(xy^3)(x^4y)^4$



1

2

3

4

5

6

7

8

9

10

11

12

13

14

15





SOLUTION

Multiplying Monomials Codebreaker

A	B	C	D	E	F	G	H	I	J	K	L	M
x^{15}	x^6y^2	$10x$	$15x^5$	x^8	x^{24}	x^6y	$21x^8$	x^4y^9	$12x^{16}y^{14}$	$20x^6y^8$	$8x^5$	x^9
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$x^{17}y^7$	x^4y^6	$20x^5y^{11}$	x^{10}	x^7y^9	$8x$	x^7	$10x^8$	$12x^6$	x^6y^6	x^9y^7	$x^{17}y^{12}$	$10x^{12}$

Multiply 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.

- | | | | | | | | | | |
|----|---|----|------------------------------|----|---------------------------|----|--------------------------------|----|---------------------------------------|
| 1 | $(x^2)(x^5)$
x^7 | 2 | $(x)(x^8)$
x^9 | 3 | $(x^4)(x^6)$
x^{10} | 4 | $(x^2y)(x^4y)$
x^6y^2 | 5 | $(xy^3)(x^3y^3)$
x^4y^6 |
| 6 | $(3x^3)(5x^2)$
$15x^5$ | 7 | $(2x^4)(5x^8)$
$10x^{12}$ | 8 | $(7x^2)(3x^6)$
$21x^8$ | 9 | $(4xy)(5x^5y^7)$
$20x^6y^8$ | 10 | $20(x^2y^3)(x^3y^8)$
$20x^5y^{11}$ |
| 11 | $4(x^9y^3)(3x^7y^{11})$
$12x^{16}y^{14}$ | 12 | $(x^3)^5$
x^{15} | 13 | $3(2x^3)^2$
$12x^6$ | 14 | $(x)(x^2y^3)^3$
x^7y^9 | 15 | $(xy^3)(x^4y)^4$
$x^{17}y^7$ |

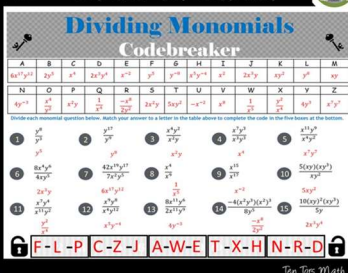
 T - M - Q B - O - D Z - H - K P - J - A V - R - N 

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DIVISION OF MONOMIALS ACTIVITY

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Dividing Monomials Code Breaker

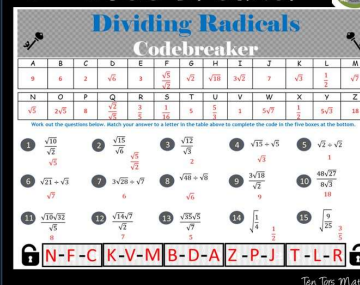


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QUOTIENTS OF ROOTS

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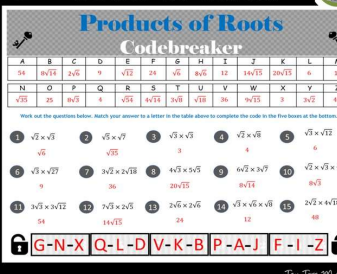


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MULTIPLYING ROOTS

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Multiplying Roots Code Breaker

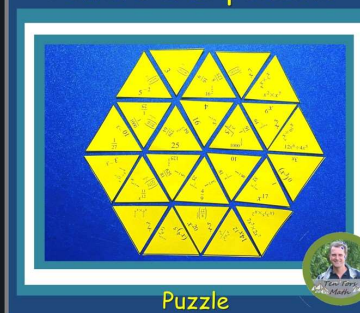


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Powers & Exponents



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<https://bit.ly/TenTorsMathLibrary>

Some more code-breakers you may like! (click the link)

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	0.0410	0.779	4.32	8.57	3.146	14.4	16.2	5.4	9.0057	40	0.086	48.73

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
0.018
- 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

Ten Tors Math

[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	36	45	68	14	16	29	33
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 36, 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
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:

- 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
199	89	170	292	258	199	102	360	144	244	107	178	204
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
408	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	15.33	3.1	13.54	44.3	19.34	0.76	8.92	0.69	15.14	14.57	7.08
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	12.04	19.17

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	148	175	30	2.8	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](#)

Some more code-breakers you may like! (click the link)

Multiplying Exponents CODE BREAKER GAME

Multiplying Exponents Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
45x ⁴	27x ³	6x ² y ³	144x ⁵ y ²	56x ⁴	x ¹¹	3x ⁷	12x ⁴	4x ¹⁰	18x ³	11x ⁴	x ²	6x ³ y ²
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
xy	x ² y ²	10x ⁴	200x ⁶	x ⁵	42x ¹⁰	x ³	x ⁴	32x ⁶	x	xy ²	x ² y	xy ²

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

- $x^5 \times x^2$
- $x^4 \times x^5$
- $x^3 \times x$
- $x^4 \times x^3 \times x^2$
- $\frac{1}{x^2} \times x^{10}$
- $8x^3 \times 7x^5$
- $7x \times 6x^{14}$
- $5x^3 \times 9x^3$
- $3x^2y \times 2x^2y \times xy$
- $40x \times 5x^8$
- $(3x^2y^3)^3$
- $(6x^2y^2)^3 \times xy$

L-R-U F-T-E S-A-M Q-B-C

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[Multiplying Exponents](#)

Quadratic Formula CODE BREAKER GAME

Quadratic Formula Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
W01	1.99	1.80	1.60	8.21	2.83	2.14	1.90	9.85	3.56	9.39	1.12	1.13
-0.61	-0.76	-1.80	-0.15	-0.65	-0.69	-1.44	-4.55	-4.80	-1.29	-0.72	-6.30	
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
0.04	1.27	1.68	2.40	1.20	3.55	0.79	9.00	7.20	11.13	4.08	1.70	4.82
0.14	1.44	1.20	1.91	-0.76	8.55	-1.56	-1.68	-3.21	1.16	1.00	-3.78	-1.81

Solve, using the quadratic formula, link your answers to the table above to complete the code in the four boxes at the bottom:

Answer to 2 decimal places:

- $3x^2 + 5x - 9 = 0$
- $x^2 + 6x - 4 = 0$
- $x^2 + 3x - 2 = 0$
- $2x^2 + 6x - 95 = 0$
- $5x^2 + 5x - 2 = 0$
- $5x^2 = 2x + 4$
- $5x^2 - 4x - 2 = 0$
- $x(6x + 1) = 11$
- $x^2 = 3(x + 3)$
- $11 - 8x - x^2 = 0$
- $x + 12(x + 3) = 7$
- $2x(2x - 3) = 1$

B-A-T S-E-L M-O-Z R-I-D

Ten Tors Math

[Quadratic Formula](#)

Scientific Notation CODE BREAKER GAME

Scientific Notation Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
7.45	0.00245	48000	2.2	4.52	7.45	17500	1.2	4.52	2.002	100	1.27	0.1
5.105	0.001	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1.0000	1.00	17500	1.1	30.000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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

- Write the following in scientific notation: 5×10^5
- Write the following in scientific notation: 7.45×10^0
- Write the following in scientific notation: 0.00245
- Write the following in scientific notation: 2.45×10^{-1}
- Write the following in scientific notation: 48000
- Write the following in scientific notation: 2.2
- Write the following in scientific notation: 4.52
- Write the following in scientific notation: 1.2
- Write the following in scientific notation: 1.10
- Write the following in scientific notation: 1.10
- Write the following in scientific notation: 1.10
- Write the following in scientific notation: 1.10
- Write the following in scientific notation: 1.10

C-A-S Y-Z-H T-J-E D-F-P X-M-Q

Ten Tors Math

[Scientific Notation](#)

Pythagorean CODE BREAKER GAME

Pythagorean Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
15	8	17	10	13	12	14	11	16	15	17	18	19
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
16	5	17	20	8	9	22	10	1	6	15	10	12

Find the value of a for each question, link your answer to the table above to complete the code in the four boxes at the bottom:

- $a^2 + 15^2 = 17^2$
- $a^2 + 8^2 = 10^2$
- $a^2 + 12^2 = 13^2$
- $a^2 + 10^2 = 11^2$
- $a^2 + 12^2 = 14^2$
- $a^2 + 11^2 = 16^2$
- $a^2 + 15^2 = 17^2$
- $a^2 + 16^2 = 18^2$
- $a^2 + 17^2 = 19^2$
- $a^2 + 18^2 = 20^2$
- $a^2 + 19^2 = 21^2$
- $a^2 + 20^2 = 22^2$

M-O-T Z-A-G R-I-D B-E-N

Ten Tors Math

[Pythagorean Theorem](#)

Simplifying Radicals CODE BREAKER GAME

Simplifying Radicals Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
703	1807	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
208	567	1005	1107	1413	1413	1413	1413	1413	1413	1413	1413	1413

Simplify the radicals below, link them to the answers in the table above to complete the code in the four boxes at the bottom:

Answer each:

- $\sqrt{27}$
- $\sqrt{50}$
- $\sqrt{216}$
- $\sqrt{700}$
- $\sqrt{243}$
- $\sqrt{3} \times \sqrt{24}$
- $\sqrt{75}$
- $\sqrt{847}$
- $\sqrt{50} \times \sqrt{10}$
- $\sqrt{245}$
- $\sqrt{21} \times \sqrt{35}$
- $\sqrt{40} \times \sqrt{2}$

L-M-G B-E-F O-Q-P V-U-Z

Ten Tors Math

[Simplifying Radicals](#)

Rational Exponents CODE BREAKER GAME

Rational Exponents Code Breaker

A	B	C	D	E	F	G	H	I	J	K	L	M
x^2y^3	x^4	$\frac{1}{x}$	$\frac{1}{y}$	$\frac{1}{x^2}$	$\frac{1}{y^2}$	$\frac{1}{x^3}$	$\frac{1}{y^3}$	$\frac{1}{x^4}$	$\frac{1}{y^4}$	$\frac{1}{x^5}$	$\frac{1}{y^5}$	$\frac{1}{x^6}$
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
$\frac{1}{x^2}$	$\frac{1}{y^2}$	$\frac{1}{x^3}$	$\frac{1}{y^3}$	$\frac{1}{x^4}$	$\frac{1}{y^4}$	$\frac{1}{x^5}$	$\frac{1}{y^5}$	$\frac{1}{x^6}$	$\frac{1}{y^6}$	$\frac{1}{x^7}$	$\frac{1}{y^7}$	$\frac{1}{x^8}$

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

- Simplify $\sqrt{x^8}$
- Simplify $x^2(x^4)^2$
- Evaluate $\frac{1}{169} \times 13$
- Simplify $\sqrt[3]{8x^3}$
- Simplify $(64x^3)^{\frac{1}{3}}$
- Evaluate $\frac{4}{7} \times \frac{16}{49}$
- Simplify $\sqrt{x} \times x^2/\sqrt{x}$
- Simplify $(125x^{12}y^6)^{\frac{1}{3}}$
- Evaluate $\frac{2}{9} \times \frac{81}{4}$
- Evaluate $\frac{2}{5} \times \frac{125}{8}$
- Simplify $\frac{9y^4}{27y^3} \times \frac{x^3}{27y^3}$
- Evaluate $\frac{1}{3} \times \frac{25}{64}$
- Evaluate $\frac{3}{4} \times \frac{64}{27}$

B-Q-M Y-O-R N-H-W V-E-S Z-U-T

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[Rational Exponents](#)

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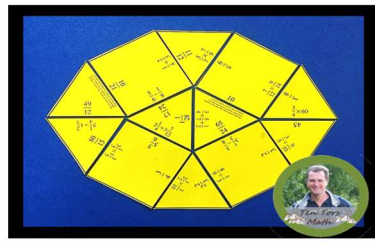
Doubling and Halving



Bingo!
Game
by Ten Tors Math

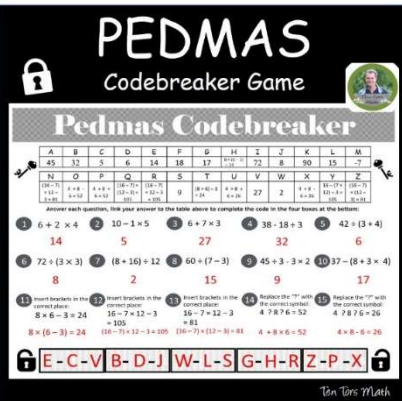
[Doubling & Halving Game](#)

Fractions - the four operations




[Fractions Puzzle](#)

PEDMAS
Codebreaker Game



[PEDMAS codebreaker activity](#)

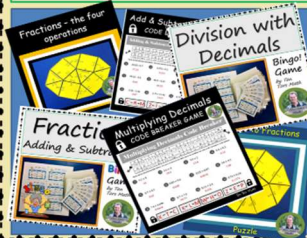
Fractions, Decimals and Percentages



Bingo!
Game
by Ten Tors Math

[FDP Bingo Game](#)


Fractions & Decimals



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[FDP Bundle](#)

Percentage Increase & Decrease




Task Cards
by Ten Tors Math

Grades 7 to 10


[Percentage Increase and Decrease](#)

Some more resources you may like! (click the link)

Spheres
Volume & Surface Area



Bingo! Game
by Ten Tors Math

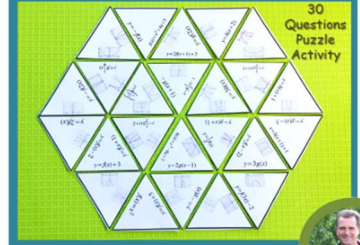


Grades 8 to 11
Unique bingo cards for up to 26 students

[Volume & Surface Area of Spheres](#)


Quadratic Graph Transformations

Graph Transformations Puzzle Activity



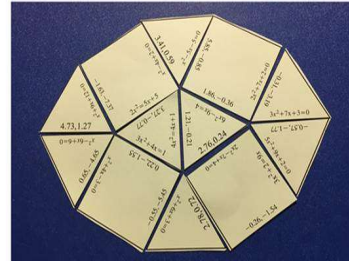
30 Questions
Puzzle Activity

Puzzle



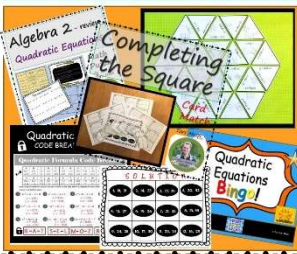
[Quadratic Graph Transformations](#)

Using the Quadratic Formula to solve equations




The Quadratic Formula

Algebra 2
Quadratic Review Activities




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Percentage Increase & Decrease




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Grades 7 to 10

[Percentage Increase and Decrease](#)

Completing the Square



Card Match
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[Completing the Square](#)