

Upper Elementary

Math Task Cards
Answer Key

Upper Elementary Advanced Math

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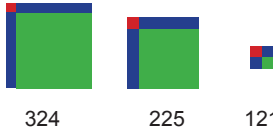



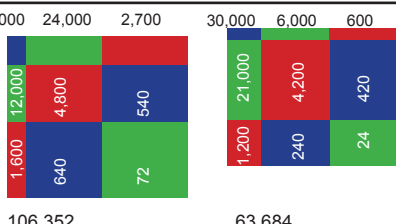
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Advanced Math Answer Key


	Left Side of the Card	Right Side of the Card	Application
Multiplication of a Binomial A1	$23 \times 46 = 1,058$	$(40 + 6) \times (20 + 8)$ $(50 + 9) \times (30 + 8)$ $(90 + 3) \times (70 + 2)$ $(50 + 2) \times (60 + 4)$ $(30 + 3) \times (10 + 7)$	3) $20 + 20 + 20 = 60$
A2	1) 2,294 2) 1,596 3) 1,736 4) 1,817	$21 + 35 + 6 + 10 = 72$ $8 + 2 + 32 + 8 = 50$ $24 + 12 + 30 + 15 = 81$	2) $120 = 5 \times 24$
A3	1) 17,366 2) 17,353 2) 22,008 4) 23,408	$15 + 9 + 30 + 18 = 72$ $32 + 56 + 4 + 7 = 99$ $45 + 20 + 63 + 28 = 156$ $48 + 30 + 56 + 35 = 169$	1) $74 \div 2 = 37$
A4	1) 89,831 2) 210,338 3) 25,122 4) 356,400	$200 + 40 + 100 + 20 = 360$ $300 + 10 + 60 + 2 = 372$ $100 + 40 + 40 + 16 = 196$	4) $6 \times 7 + 10 = 52$
A5	Answers will vary	 $100 + 40 + 40 + 16 = 196$	1) $(250 - 150) \div 2 = 50$
A6	The partial product is in the lattice. Draw a vertical line from the decimal point through the lattice. Multiply the decimal place values to find the decimal point placement	 324 225 121	3) $(148 - 52) \div 3 = 32$
Drawing a Binomial and a Trinomial A7	A slide rule is a mechanical device used for quick calculations. It is used for \times , \div , functions, and trigonometry. It has been replaced by the calculator.	Answer is given on the card.	$8(65 \div 5) = 104$
A8	1) 5,238 2) 4,239 3) 4,151 4) 3,245	 $2,000 + 120 + 100 + 6 = 2,226$ $600 + 80 + 240 + 32 = 952$	$\$2.69 (96 \div 8) = \32.28
A9	1) 8,292 2) 10,872 3) 43,134 4) 332,442	 $1,800 + 120 + 60 + 4 = 1,984$ $800 + 20 + 480 + 12 = 1,312$	$\frac{2}{3} \times 12 = 8$
A10	1) 90 2) 206	 $102,425$ $138,338$	$6(45 \times 8) = 2,160$
A11	Answers will vary.	 $106,352$ $63,684$	$30(30 - 4) \div 60 = 13$

	Left Side of the Card	Right Side of the Card	Application
A12	Answers will vary.		$(\$8.50 \times 2) + (\$6.75 \times 2) = \$30.50$
Square Guides B1	x is a variable , 7 and 9 are numbers + is the operation $x = 7$	Square guide may remind students of checkerboard, lattice, or Napier's Bones $13^2 = 169$	1) $T = C + 5$ 2) $T = K + 7$ 3) $E = K - 3$
B2	$\begin{array}{r} x + 8 = 13 \\ - 8 \quad - 8 \\ \hline x = 5 \end{array}$	1) $16^2 = 256$ 2) $34^2 = 1,156$ 3) $49^2 = 2,401$ 4) $25^2 = 625$	1) $L = 3S$ 2) $C = G + .50$ 3) $S = 2(B-3)$
B3	1) $10 = x$ 2) $x = 20$ 3) $25 = x$ 4) $x = 7$ **Mathematical convention usually places the variable to the left of the = sign**	1) $296^2 = 87,616$ 2) $385^2 = 148,225$ 3) $741^2 = 549,081$	$2h + (2h + h) + 2(2h + h) = B$
B4	1) $x = 10$ 2) $x = 4$ 3) $x = 25$ 4) $x = 7$	1) $11^2 = 121$ 2) $111^2 = 12,321$ 3) $1,111^2 = 1,234,321$ 4) $11,111^2 = 123,454,321$ 5) $111,111^2 = 12,345,654,321$ 6) $1,111,111^2 = 123,456,7654,321$	$s = r + 2r + (3r + 6)$
B5	1) $x = 6$ 2) $x = 4$ 3) $x = 10$ 4) $x = 6$	Binomial Formula $a^2 + 2ab + b^2$	$30 = 1/3 g + 1/2 s + d$
B6	1) $x = 3$ 2) $x = 2$ 3) $x = 7$ 4) $x = 5$	$a^2 + 2ab + b^2$ 1) $43^2 = 1,849$ 2) $62^2 = 3,844$ 2) $17^2 = 289$ 4) $28^2 = 784$	$(l + 8) + s = 45$
B7	1) $x = 6$ 2) $x = 4$ 3) $x = 7$ 4) $x = 5$	Trinomial Formula $a^2 + 2ab + 2ac + b^2 + 2bc + c^2$	$3m + (3m - .5m) + 2(3m) = s$
B8	1) $x = 7$ 2) $x = 12$ 3) $x = 7$ 4) $x = 3$	$a^2 + 2ab + 2ac + b^2 + 2bc + c^2$ 1) $136^2 = 190,096$ 2) $253^2 = 64,009$ 3) $527^2 = 277,729$ 4) $189^2 = 35,721$	$3i + (3i + 2i) + i = t$
Square Roots C1	Definitions are on the card	Information is on the card	4, 6 6, 8 8, 10 10, 12 12, 14
C2	Definitions are on the card	$\sqrt{25} = 5$ $\sqrt{49} = 7$ $\sqrt{81} = 9$	9, 3 10, 4 11, 5 12, 6 13, 7
C3	0 = whole, integer, rational, real 3.4 = rational, real $\sqrt{28}$ = rational, real 65 = natural, whole, integer, rational, real -5 = integer, rational, real	$\sqrt{53} = 7$ r. 4 $\sqrt{46} = 6$ r. 10 $\sqrt{31} = 5$ r. 6	4, 8 8, 16 16, 32 32, 64 64, 128
C4	53 = natural, whole, integer, real 3/8 = rational, real 2.444 = rational, real -15 = integer, rational, real 18 = natural, whole, integer, rational, real	For every 2 digits in the radicand, there are 1-2 digits in the root.	5, 10 13, 18 21, 26 29, 34 37, 42
C5	Answers will vary	1) 2 digits 2) 3 digits 3) 4 digits 4) 4 digits 5) 3 digits 6) 3 digits 7) 3 digits 8) 4 digits 9) 5 digits 10) 5 digits	50, 46, 40, 36 30, 26 20, 16 10, 6
C6	Answers will vary	Answers will vary.	3, 9 6, 18 9, 27 12, 36 15, 45

Left Side of the Card

Right Side of the Card

Application

C7	R Q whole N I 	$\sqrt{625} = 25$	$x \div 3$
C8	1) 6 2) 4 3) 0 4) x 5) x 6) x	$\sqrt{529}^{23}$ $\sqrt{1156}^{34}$	x^2
C9	Information is on the card	$\sqrt{1764}^{42}$	$2x + 1$
C10	1) 4 2) 10 3) 16 4) 5 5) 16	$\sqrt{576}^{24}$ $\sqrt{2601}^{51}$	$3x - 1$
C11	1) 8 2) 6 3) 18 4) 1 5) 4	$\sqrt{1089}^{33}$ $\sqrt{3844}^{62}$	x^3
C12	1) 2 2) 135 3) 67 4) 30 5) 66	$\sqrt{1228}^{35r.3}$ $\sqrt{260}^{16r.4}$	Information is on the card
C13	1) 66 2) 2 3) 11 4) 102 5) 92	$\sqrt{53361}^{231r.2}$ $\sqrt{1228}^{343}$	$x + (x + 7) + (x + 7 + 6) = 80$ $3x + 20 = 80$
C14	1) 54 2) 34 3) 5 4) 459 5) 144	$\sqrt{181476}^{426}$ $\sqrt{99225}^{315r.3}$	$24 = x + x + (x + 3)$ $24 = 3x + 3$
C15	1) 134 2) 10 3) 4 4) 50 5) 288	$\sqrt{96721}^{311r.4}$ $\sqrt{190969}^{437}$	$x + 2x + 4x = 35$ $7x = 35$
Square Root Algorithm Binomial D1	Answers will vary but could include, negative temperatures, below sea level, or debts.	Answer is on the card.	$3x + 10 = 22$ $x = 4$
D2	1) > 2) > 3) < 4) < 5) < 6) <	$\sqrt{4096}^{64}$ $\sqrt{3249}^{57}$	$9x + 1 = 19$ $x = 2$
D3	Answers will vary and could include decimals, or fractions.	$\sqrt{2304}^{48}$ $\sqrt{1521}^{39}$	$4x + 51 = 251$ $x = 50$
D4	1) $4 + 2 = 6$ 2) $3 - 1 = 2$ 3) $2 + -1 = 1$ 4) $-4 + 4 = 0$ 5) $-6 + -3 = -9$ 6) $3 + -6 = -3$	$\sqrt{784}^{28}$ $\sqrt{8464}^{92}$	$4x + 24 = 88$ $x = 16$
Square Root Algorithm Trinomial D5	1) $-4 + 2 = -2$ 2) $-1 + -5 = -6$ 3) $-6 + 1 = -5$ 4) $-7 + 0 = -7$ 5) $-9 + 3 = -6$ 6) $-3 + 6 = 3$	Answer is on the card.	$x + 8x + 4x = 5850$ $x = 450$
D6	1) $7 + -3 = 4$ 2) $-7 + 3 = -4$ 3) $-3 + 7 = 4$ 4) $-3 + -7 = -10$	$\sqrt{398161}^{631}$ $\sqrt{187489}^{433}$	$x + (x + 3) + 2x + 2(x + 3) = 13$ $x = 9$
D7	1) -18.77 2) .8 3) -8.17 4) .69 5) -4.86 6) -26.439	$\sqrt{232324}^{482}$ $\sqrt{25281}^{159}$	$3x + x + (3x + 1) = 15$ $x = 2$
D8	1) -.817 2) -.98 3) .23 4) .69 5) .94 6) -1.46	$\sqrt{127449}^{357}$ $\sqrt{970225}^{985}$	$x + 4x + (4x - 1) = 17$ $x = 2$
D9	Answers will vary and could include decimals, or fractions.	$\sqrt{567009}^{753}$ $\sqrt{66564}^{258}$	$x + (x + 1) + (x + 2) = 114$ $x = 37$
D10	Answers will vary and could include decimals, or fractions.	$\sqrt{273529}^{523}$ $\sqrt{660969}^{813}$	$x + (x + 2) + (x + 4) = 159$ $x = 51$

	Left Side of the Card	Right Side of the Card	Application
D 11	Answers will vary.	$\sqrt[25]{625}$ $\sqrt[43]{1849}$	Answer is on the card
D12	Answers will vary.	$\sqrt[34]{1156}$ $\sqrt[18]{324}$	1) x = 5 2) x = 6 3) x = 4 4) x = 3
D 13	Answers will vary.	$\sqrt[125]{15625}$ $\sqrt[231]{53361}$	1) x = 7 2) x = 4 3) x = 1 4) x = 2
D 14	Answers will vary.	$\sqrt[345]{119025}$ $\sqrt[521]{271441}$	1) x = 2 2) x = 1 3) x = 1 4) x = 7
Special Cases E 1	Answer is on the card.	Answer is on the card	1) x = 6 2) x = 6 3) x = 8 4) x = 5
E 2	Answers will vary.	$\sqrt[600]{360000}$ $\sqrt[500]{250000}$	1) x = 4 2) x = 6 3) x = 5 4) x = 1
E 3	Answers will vary.	$\sqrt[630]{396900}$ $\sqrt[320]{102400}$	1) x = 6 2) x = 10 3) x = 10 4) x = 5
E 4	Answers will vary.	$\sqrt[304]{92416}$ $\sqrt[501]{251001}$	1) x = 6 2) x = 4 3) x = 2 4) x = 0
E 5	1) commutative + 2) identity x 3) associative x 4) identity x 5) distributive 6) identity +	$\sqrt[404r2]{163218}$ $\sqrt[506r3]{256039}$	1) x = 6 2) x = 7 3) x = 0 4) x = 3
E 6	1) commutative + 2) distributive 3) associative + 4) identity x 5) associative + 6) commutative +	$\sqrt[803r1]{644810}$ $\sqrt[207r4]{42853}$	x + 2x = x + 14, x = 7 1) 7 2) 14 3) 21
E 7	1) identity + 2) distributive 3) commutative x 4) distributive 5) associative x 6) commutative +	$\sqrt[3201]{10246401}$	x + 21 = 4x + 3, x = 6 27 days
E 8	Bones Card Game	$\sqrt[4502]{20268004}$	3x + 4 = 2x + 10 x = 6 \$22
E 9	Bones Card Game	$\sqrt[6020]{36240400}$	x + 3x - 2x + 7 = x + 15 x = 8 inches
Squares to Cubes F 1	1) -3 2) -5 3) -20 4) -12	46,656 3,125 81 256	Answer is on the card
F 2	1) -11 2) -2 3) -8 4) -25	7 19 37 61 91	x = 9 Math = 3 Language = 9 Cultural = 5
F 3	1) + 9 2) +13 3) +10 4) + 17	127 169 217 271	x = 20 Lettuce = 20 Carrots = 5 Beans = 3
F 4	1) -5 2) +11 3) +40 4) -0.6 5) 10.373 6) 35.0823 When subtracting a negative the 2 negative signs result in addition.	10[(10x10)+(4x10)+(10x4)+(4x4)] + 4[(10x10)+(4x10)+(10x4)+(4x4)] = 2744	x = 6 Mon. = 3 Tues. = 6 Wed = 2
F 5	A and E, D and G H and C F and B	3 ³ + 3(3 ²) + 3(3 ¹) + 1 ³ = 64 6 ³ + 3(6 ²) + 3(6 ¹) + 1 ³ = 343 8 ³ + 3(8 ²) + 3(8 ¹) + 1 ³ = 729	x = 4 Joaquin = 2 John = 4
F 6	Copy symbols on the card.	5 ³ + 3(5 ²) + 3(5 ¹) + 1 ³ = 216 4 ³ + 3(4 ²) + 3(4 ¹) + 1 ³ = 125 7 ³ + 3(7 ²) + 3(7 ¹) + 1 ³ = 512	x = 8 Peter = 5 Parker = 2 Doris = 1
F 7	1) x > -1 2) x ≤ 22 3) x < 9 4) x ≥ -8 5) x > 40	4 ³ + 3(4 ² x3) + 3(3 ² x4) + 3 ³ = 343 (Binomial cube, numerically)	x = 9 Ms. Arbiter = 5 Ms. Jodi = 3 Ms. Olga = 11

	Left Side of the Card	Right Side of the Card	Application
F 8	1) $x \geq -5$ 2) $x < 8$ 3) $x > -2$ 4) $x \geq 19$ 5) $x < 90$	$4^3 + 3(4^2 \times 3) + 3(3^2 \times 4) + 3(4^2 \times 2) + 6(4 \times 3 \times 2) + 3^3 + 3(3^2 \times 2) + 3(4 \times 2^2) + 3(3 \times 2^2) + 2^3 = 729$ (Trinomial cube, numerically)	$x = 5$ minute 1 = 8 minute 2 = 3 minute 3 = 1
F 9	1) $x > 3$ 2) $y \geq -1$ 3) $z \leq 14$ 4) $x \geq 17$ 5) $y > -24$ 6) $z \geq 1$	$2^3 + 3(2^2 \times 4) + 3(4^2 \times 2) + 4^3 = 216$ $3^3 + 3(3^2 \times 5) + 3(5^2 \times 3) + 5^3 = 512$ $5^3 + 3(5^2 \times 4) + 3(4^2 \times 5) + 4^3 = 729$	$x = 12$ card game apps 12
F 10	1) $z > -18$ 2) $a < 7$ 3) $b \leq -13$ 4) $c < -20$ 5) $p > 0$ 6) $b < 8$	$3^3 + 3(3^2 \times 3) + 3(3^2 \times 3) + 3^3 = 216$ $4^3 + 3(4^2 \times 4) + 3(4^2 \times 4) + 4^3 = 518$ $7^3 + 3(7^2 \times 2) + 3(2^2 \times 7) + 2^3 = 729$	$x = 9$ grasshoppers = 3 ladybugs = 9 crickets = 5
Cube Roots G 1	1) 3 2) -2 3) 4 4) -4	For every three digits in the radicand, there will be one digit in the root.	$x = -5$
G 2	Answer is on the card	Answer is on the card	$x = 48$
G 3	1) -4 2) +8 3) +3 4) -5 5) +2 6) -3	Answer is on the card	$x = -6$
G 4	1) -18.2 2) -2 3) +2.813 4) -22.7272 5) -52 If the signs are the same the answer is positive, if they are different the quotient is negative.	$\sqrt[3]{148877}^{53}$ $\sqrt[3]{438976}^{76}$	Elsie = 613 gallons Bossie = 851 gallons
G 5	1) -24 2) -69 3) -19.2 4) -3 5) -27.52 6) -22.5	$\sqrt[3]{262144}^{64}$ $\sqrt[3]{50653}^{37}$	$x = 19$ inches
G 6	Answer is on the card.	Teacher lesson	54 students in each bus
G 7	1) -160 2) -6 3) -9.46 4) -.1323 5) -3/8 6) -.125 A positive x negative = negative	Answer is on the card.	82 games
G 8	Answer is on the card.	$\sqrt[3]{71991296}^{416}$	She painted for 4 hours
G 9	1) 14 2) 555 3) 2.812 4) 479.37 5) $3\frac{1}{2}$ 6) .1875	$\sqrt[3]{43614208}^{352}$	215 subscriptions
G 10	1) 13,608 2) -840 If the number of negatives is odd the product is negative. If the number of negatives is even, the product is positive.	$\sqrt[3]{12977875}^{235}$	9 years old
Alternative Bases H 1	1) 4 2) 9 3) 120 4) 50	1,2,3,10,11,12,13,20,21,22,23,30,31,32,33,100,101,102,103,110	Answer is on the card.
H 2	1) \$18 \$54 2) \$6.45 \$49.45	1) 389_{10} 2) 21_{10} 3) 179_{10} 4) 26_{10}	42.5 hours
H 3	1) 360 ft ² 1,560 ft ² 2) 6 days (and a little more)	1) 954_{10} 2) 493_{10} 3) 488_{10} 4) 152_{10}	240 words in 30 minutes
H 4	1) 6 coconuts 2) 24 problems	1) 373_{10} 2) 41_{10} 3) 333_{10} 4) 70_{10}	35 defective parts
H 5	1) 12 pages 48 pages 2) 21 boxes	1) 4134_5 2) 5545_6 3) 1001_2 4) 1010_4	300 miles

	Left Side of the Card	Right Side of the Card	Application	
H 6	1) 20 pages 2) 20 tasks	1) 11120_3 3) 675_8	2) 10220_7 4) 2014_5	2 hours 27 minutes
H 7	1) \$35 \$42 2) \$50	1) 10100_2 3) 677_8	2) 7220_9 4) 1005_6	100 tablets
H 8	1) 4 days 2) 15 gallons of paint	1) 11120_3 3) 675_8	2) 10220_7 4) 2014_5	4320 women students
H 9	1) \$488.88 2) \$1333.33	1) 13021_4 3) 4787_9	2) 10002_7 4) 20_3	\$18.45
H 10	1) 88 books 2) 20 children	1) 12421_5 3) 224202_6	2) 202011_3 4) 134026_7	129 inches 10 ft 9 in

H 11	1) 33% 2) 25%	1) 10_{10} 3) 16_{10}	2) 15_{10} 4) 20_{10}	\$8.66	
H 12	1) 60% 2) 69%	1) 14_{10} 4) 19_{10}	2) 11_{10} 5) 28_{10}	3) 14_{10} 6) 12_{10}	24 minutes
H 13	1) 57% 2) .2%	1) $9B\ 6\ 5_{12}$ 3) $2\ 0\ 6_{14}$	2) $1\ 5\ 6\ 3_{16}$ 4) $3\ 7\ 7\ 9B_{13}$	\$2,388 in 2 months	
H 14	1) 44% 2) approximately 19%	1) $9A\ 3\ 9_{11}$ 3) $1\ 8\ 5_{16}$	2) $9D\ 0\ 9B_{15}$ 4) $3\ 3\ 2_{12}$	2310 miles	

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