

KMA Math Diagnostic Test 2026

Grades 4–6 · Complete Answer Key & Solutions

ADDITION — COMPUTATION

Column 1 · 4th Grade (4.NBT.B.4)

#	Problem	Answer	Solution Notes
1a	$47,358 + 26,745$	74,103	Standard algorithm; regroup as needed
1b	$309,847 + 54,266$	364,113	Regroup in tens and thousands columns
1c	$598,001 + 403,999$	1,002,000	Crosses the million; clean result
1d	$24,836 + 71,409 + 38,755$	134,000	Add all three 5-digit numbers

Column 2 · 5th Grade (5.NBT.B.7) — Decimal Addition

#	Problem	Answer	Solution Notes
2a	$46.8 + 135.47$	182.27	Align decimals: $46.80 + 135.47$
2b	$7.09 + 12.6 + 0.85$	20.54	Align: $7.09 + 12.60 + 0.85$
2c	$203.07 + 98.9$	301.97	Align: $203.07 + 98.90$
2d	$5.6 + 18.74 + 100.08$	124.42	Align: $5.60 + 18.74 + 100.08$

Column 3 · 6th Grade (6.NS.B.3) — Decimals & Integers

#	Problem	Answer	Solution Notes
3a	$6.105 + 10.4 + 3.075$	19.58	Align all to thousandths place
3b	$-38 + 15$	-23	Subtract absolute values; keep sign of larger
3c	$-47.6 + (-18.9)$	-66.5	Both negative; add absolute values, keep -
3d	$-125 + 48 + (-33)$	-110	$-125 + 48 = -77$; $-77 + (-33) = -110$

ADDITION — WORD PROBLEMS

4a [4th Grade · One-Step]

Answer: 2,118 canned goods

$$1,245 + 873 = 2,118$$

5a [5th Grade · One-Step]

Answer: 27.68 seconds combined

$$13.6 + 14.08 = 13.60 + 14.08 = 27.68 \text{ seconds}$$

6a [6th Grade · One-Step]

Answer: 1.213 kg of nuts

$$0.243 + 0.970 = 1.213 \text{ kilograms}$$

4b [4th Grade · Multi-Step]

Answer: 1,071 rescues; NO — did not meet goal

$$486 + 375 + 210 = 1,071$$

$1,071 < 1,200$ — they were 129 rescues short

5b [5th Grade · Multi-Step]

Answer: Total = \$34.82; NO — she is \$0.01 short

$$\$24.99 + \$6.75 + \$3.08 = \$34.82$$

$\$34.82 > \34.81 — she cannot afford all three items

6b [6th Grade · Multi-Step]

Answer: Balance = -\$1,285.00; must deposit \$1,285.00

$$\text{Charges: } -\$875.15 + (-\$409.85) = -\$1,285.00$$

$$\text{Equation: } 0 + (-875.15) + (-409.85) = -1,285.00$$

Must deposit \$1,285.00

SUBTRACTION — COMPUTATION

Column 1 · 4th Grade (4.NBT.B.4)

#	Problem	Answer	Solution Notes
1a	83,741 - 45,628	38,113	Regroup across all columns as needed
1b	500,000 - 137,486	362,514	Multiple regroupings from zeros
1c	402,305 - 58,967	343,338	Regroup across zeros in 402,305
1d	716,040 - 289,358	426,682	Careful regrouping in ten-thousands column

Column 2 · 5th Grade (5.NBT.B.7) — Decimal Subtraction

#	Problem	Answer	Solution Notes
2a	74.3 - 28.65	45.65	74.30 - 28.65; regroup tenths
2b	100 - 43.78	56.22	100.00 - 43.78; regroup from whole
2c	205.04 - 67.9	137.14	205.04 - 67.90; align decimals first
2d	83.00 - 19.47 - 6.8	56.73	83.00 - 19.47 = 63.53; 63.53 - 6.80 = 56.73

Column 3 · 6th Grade (6.NS.B.3) — Decimals & Integer Subtraction

#	Problem	Answer	Solution Notes
3a	1,047.83 - 589.071	458.759	Align to thousandths: 1,047.830 - 589.071
3b	-18 - (+25)	-43	Add the opposite: $-18 + (-25) = -43$
3c	-54.2 - (-81.7)	27.5	Add the opposite: $-54.2 + 81.7 = 27.5$
3d	47 - (-63) - 28	82	$47 + 63 = 110$; $110 - 28 = 82$

SUBTRACTION — WORD PROBLEMS

4a [4th Grade · One-Step]

Answer: 37,222 fewer visitors

$$312,540 - 275,318 = 37,222$$

4b [4th Grade · Multi-Step]

Answer: 3,814 bottles remain

$$8,000 - 2,750 = 5,250 \text{ after Monday}$$
$$5,250 - 1,436 = 3,814 \text{ remaining}$$

5a [5th Grade · One-Step]

Answer: 1.65 liters poured

$$2.5 - 0.85 = 2.50 - 0.85 = 1.65 \text{ liters}$$

5b [5th Grade · Multi-Step]

Answer: Change = \$24.56; YES — he can afford the \$18.99 shirt

$$\$18.49 + \$6.95 = \$25.44 \text{ spent}$$
$$\$50.00 - \$25.44 = \$24.56 \text{ change}$$
$$\$24.56 > \$18.99, \text{ so yes}$$

6a [6th Grade · One-Step]

Answer: 182.71 gallons used

$$500.80 - 318.09 = 182.71 \text{ gallons}$$

6b [6th Grade · Multi-Step]

Answer: Final balance: \$339.26

$$-\$748.25 + \$1,200.00 = \$451.75$$
$$\$451.75 - \$112.49 = \$339.26 \text{ final balance}$$

MULTIPLICATION — COMPUTATION

Column 1 · 4th Grade (4.NBT.B.5)

#	Problem	Answer	Solution Notes
1a	$3,847 \times 6$	23,082	Multiply each digit; carry as needed
1b	$7,056 \times 8$	56,448	$8 \times 6 = 48$ carry 4; $8 \times 5 = 40 + 4 = 44$, etc.
1c	46×73	3,358	$46 \times 3 = 138$; $46 \times 70 = 3,220$; $138 + 3,220 = 3,358$
1d	85×64	5,440	$85 \times 4 = 340$; $85 \times 60 = 5,100$; $340 + 5,100 = 5,440$

Column 2 · 5th Grade (5.NBT.B.7) — Decimal Multiplication

#	Problem	Answer	Solution Notes
2a	348×276	96,048	Standard multi-digit; use partial products
2b	6.4×7	44.8	$64 \times 7 = 448$; 1 decimal place \rightarrow 44.8
2c	3.25×14	45.50	$325 \times 14 = 4,550$; 2 decimal places \rightarrow 45.50
2d	4.6×2.3	10.58	$46 \times 23 = 1,058$; 2 decimal places \rightarrow 10.58

Column 3 · 6th Grade (6.NS.B.3) — Decimals & Integer Multiplication

#	Problem	Answer	Solution Notes
3a	47.6×0.135	6.426	$476 \times 135 = 64,260$; 4 decimal places \rightarrow 6.4260
3b	-9×14	-126	Positive \times negative = negative
3c	$-8 \times (-15)$	120	Negative \times negative = positive
3d	-6.5×4.2	-27.3	$65 \times 42 = 2,730$; 2 decimals \rightarrow 27.30; negative

MULTIPLICATION — WORD PROBLEMS

4a [4th Grade · One-Step]

Answer: 2,200 notebooks

$$8 \times 275 = 2,200$$

5a [5th Grade · One-Step]

Answer: \$52.20

$$\$4.35 \times 12 = \$52.20$$

6a [6th Grade · One-Step]

Answer: -750 feet (750 feet below sea level)

$$12.5 \text{ ft/min} \times 60 \text{ min} = 750 \text{ feet}$$

Depth relative to sea level = -750 feet

4b [4th Grade · Multi-Step]

Answer: \$6,120 collected

$$34 \text{ rows} \times 20 \text{ seats} = 680 \text{ seats}$$

$$680 \times \$9 = \$6,120$$

5b [5th Grade · Multi-Step]

Answer: 4,320 pounds of strawberries

$$24 \times 100 = 2,400 \text{ plants}$$

$$2,400 \times 1.8 = 4,320 \text{ pounds}$$

6b [6th Grade · Multi-Step]

Answer: Astronaut: 30.06 lb; Machine: 300.6 lb on Moon

$$180 \times 0.167 = 30.06 \text{ lb (astronaut on Moon)}$$

$$\text{Machine on Earth: } 180 \times 10 = 1,800 \text{ lb}$$

$$1,800 \times 0.167 = 300.6 \text{ lb (machine on Moon)}$$

DIVISION — COMPUTATION

Column 1 · 4th Grade (4.NBT.B.6)

#	Problem	Answer	Solution Notes
1a	7,248 / 6	1,208	$7 \div 6 = 1$ R1; bring down 2: $12 \div 6 = 2$; $48 \div 6 = 8$
1b	5,391 / 7	770 R1	$5,391 = 7 \times 770 + 1$
1c	4,032 / 9	448	$40 \div 9 = 4$ R4; $43 \div 9 = 4$ R7; $72 \div 9 = 8$
1d	6,175 / 8	771 R7	$6,175 = 8 \times 771 + 7$

Column 2 · 5th Grade (5.NBT.B.6/B.7) — Long Division & Decimals

#	Problem	Answer	Solution Notes
2a	3,276 / 12	273	$12 \times 273 = 3,276$; exact
2b	4,819 / 23	209 R12	$23 \times 209 = 4,807$; $4,819 - 4,807 = 12$ remainder
2c	86.4 / 6	14.4	$864 / 6 = 144$; place decimal -> 14.4
2d	55.08 / 12	4.59	$5,508 / 12 = 459$; place decimal -> 4.59

Column 3 · 6th Grade (6.NS.B.3) — Decimal & Integer Division

#	Problem	Answer	Solution Notes
3a	805.7 / 35	23.02	$35 \times 23 = 805$; $0.7 / 35 = 0.02$ -> 23.02
3b	-84 / 12	-7	$84 / 12 = 7$; negative / positive = negative
3c	-135 / (-9)	15	$135 / 9 = 15$; negative / negative = positive
3d	0.0744 / 6.2	0.012	Multiply both by 10: $0.744 / 62 = 0.012$

DIVISION — WORD PROBLEMS

4a [4th Grade · One-Step]

Answer: 107 apples per crate

$$856 / 8 = 107$$

4b [4th Grade · Multi-Step]

Answer: 4 chairs per table

$$2 \text{ areas} \times 4 \text{ tables} = 8 \text{ tables total}$$
$$32 / 8 = 4 \text{ chairs per table}$$

5a [5th Grade · One-Step]

Answer: 13 weeks

$$\$150 / \$12 = 12.5 \text{ weeks} \rightarrow \text{round up to 13 weeks}$$

5b [5th Grade · Multi-Step]

Answer: \$0.78 per movie; both offers are equal

$$\$4.68 / 6 = \$0.78 \text{ per movie}$$
$$\$6.24 / 8 = \$0.78 \text{ per movie}$$

Both offers cost the same.

6a [6th Grade · One-Step]

Answer: -19 feet per dive

$$-114 / 6 = -19 \text{ feet per dive}$$

6b [6th Grade · Multi-Step]

Answer: 11 hours

$$\text{Rate: } -56.7 / 7 = -8.1 \text{ degrees per hour}$$

Need to drop 89.1 degrees (from 89.1 to 0)

$$89.1 / 8.1 = 11 \text{ hours}$$

MIXED OPERATIONS — WORD PROBLEMS

4th Grade Problems

1a [4th Grade · Multi-Step]

Answer: 20 treats per dog

$$4 \text{ bags} \times 15 \text{ treats} = 60 \text{ treats total}$$

$$60 / 3 \text{ dogs} = 20 \text{ treats per dog}$$

1b [4th Grade · Multi-Step]

Answer: 6 cookies each; 3 left over

$$25 + 12 + 20 = 57 \text{ cookies total}$$

$$57 / 9 = 6 \text{ remainder } 3$$

Each student gets 6 cookies; 3 left over

5th Grade Problems

2a [5th Grade · Multi-Step]

Answer: \$89.80 profit

$$\text{Cost: } 20 \times \$6.50 = \$130.00$$

$$\text{Revenue: } 20 \times \$10.99 = \$219.80$$

$$\text{Difference: } \$219.80 - \$130.00 = \$89.80$$

2b [5th Grade · Multi-Step]

Answer: \$84.00 spent on lunch that week

$$\text{Fancy restaurant: } \$36.00$$

$$\text{Cafeteria meal: } \$36 / 3 = \$12.00$$

$$4 \text{ cafeteria days: } 4 \times \$12 = \$48.00$$

$$\text{Total: } \$36 + \$48 = \$84.00$$

6th Grade Problems

3a [6th Grade · Multi-Step]

Answer: 6.6 cups of flour

$$\text{Rate: } 2.75 / 25 = 0.11 \text{ cups per cookie}$$

$$60 \times 0.11 = 6.6 \text{ cups of flour}$$

3b [6th Grade · Multi-Step]

Answer: Before tax: \$58.00 | With 10% tax: \$63.80

$$\text{Original: } \$80.00$$

$$15\% \text{ off: } \$80 \times 0.15 = \$12.00 \rightarrow \$80 - \$12 = \$68.00$$

$$\$68.00 - \$10.00 \text{ coupon} = \$58.00$$

$$10\% \text{ tax: } \$58 \times 0.10 = \$5.80$$

$$\text{Final total: } \$58.00 + \$5.80 = \$63.80$$