Grade 5 Math: Printables Pack

Grade 5 Math · Contents

1. Timed drills (mixed) with keys
2. Fact-mastery tracker
3. Place-value mat (billions to thousandths)
4. Fraction strips
5. Coordinate grids
6. Graph paper
7. Record sheet
8. Unit checks and exams with keys

Print only what you need. The lesson worksheets and their keys are separate PDFs linked from each lesson.

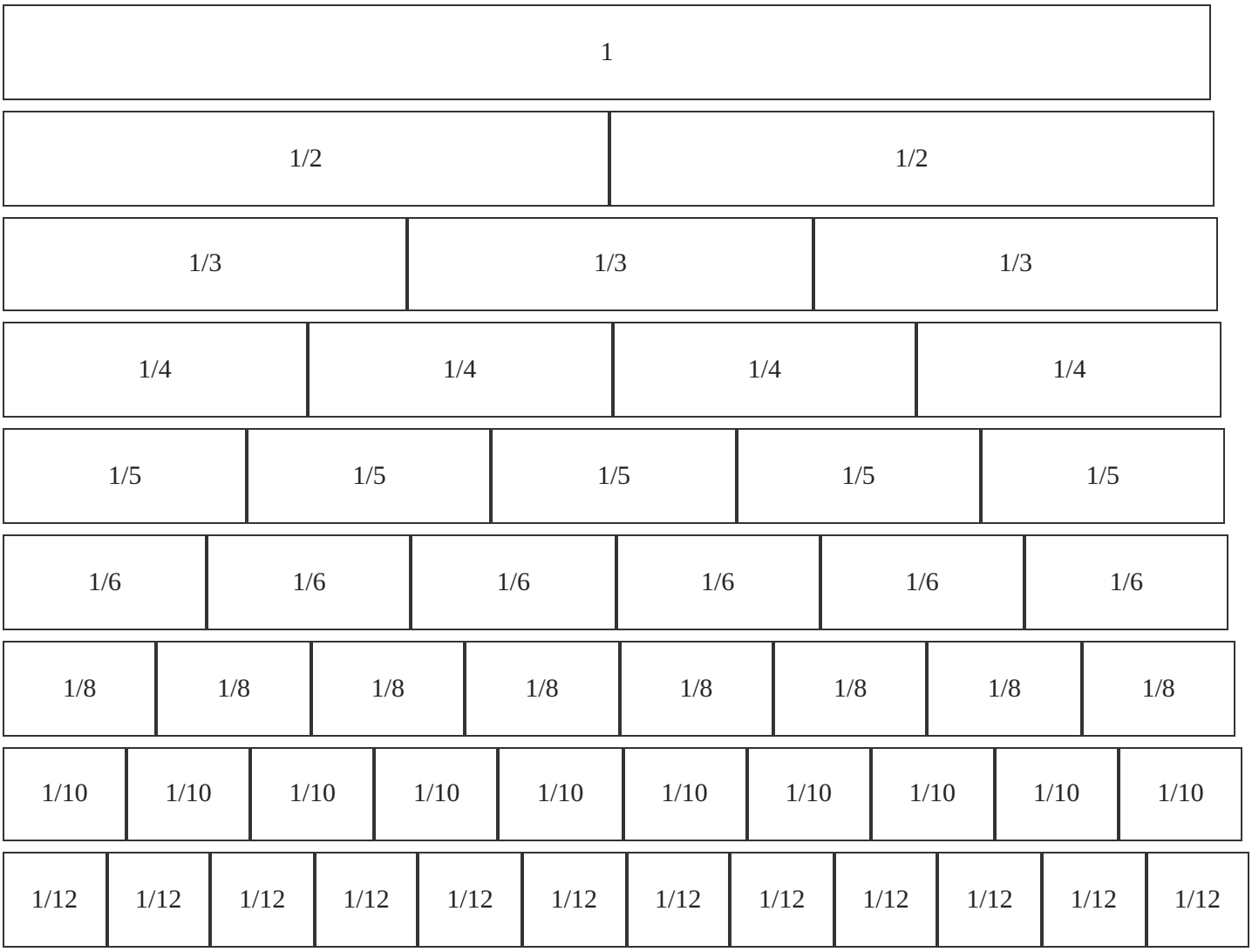
Place-Value Mat

Grade 5 Math · Put blocks or digit cards in the right column.

Billions	Millions	Thousands	Ones	.	Tenths	Hundredths	Thousandths

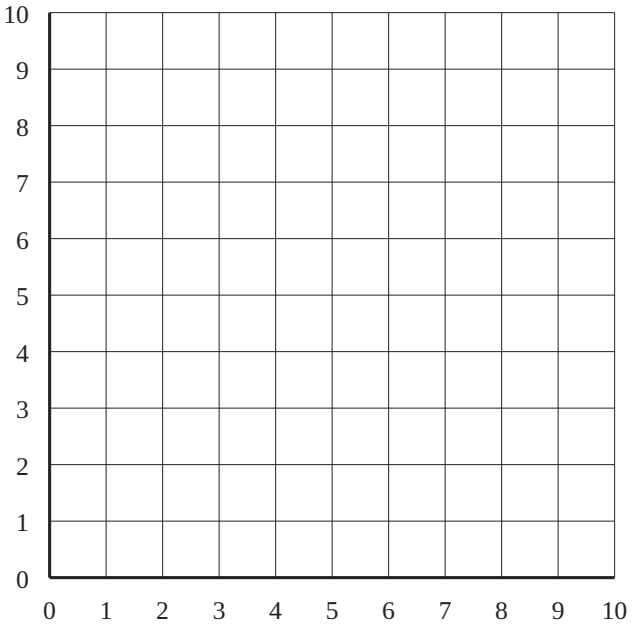
Fraction Strips

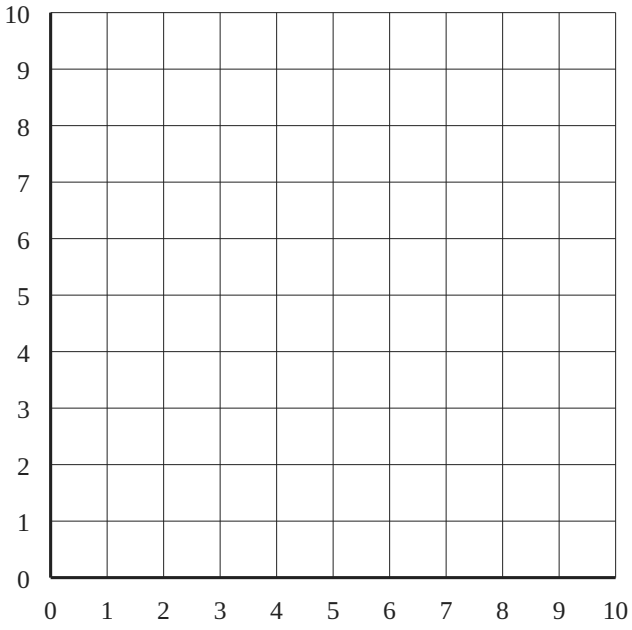
Grade 5 Math · Cut out each strip. Compare pieces to find equivalent fractions.

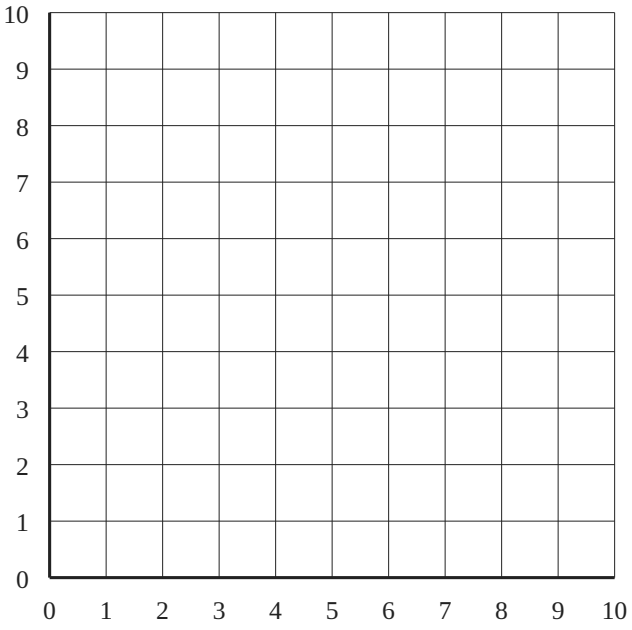


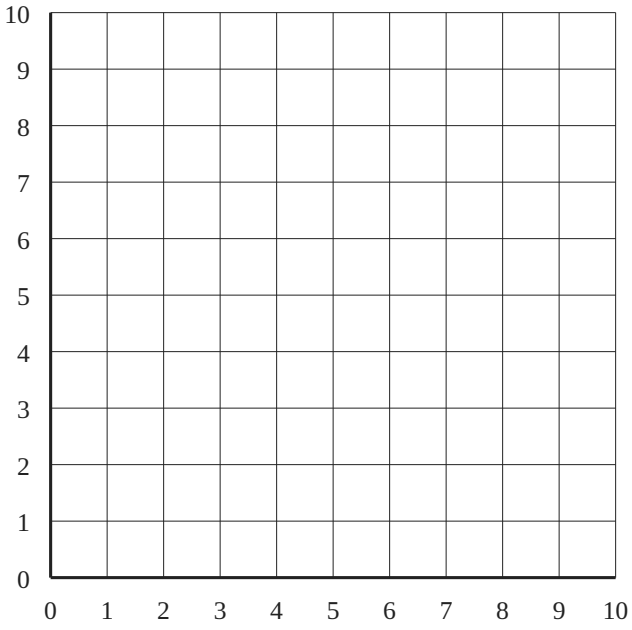
Coordinate Grids

Grade 5 Math · First-quadrant grids for plotting points and patterns.









Timed Drill: Mixed Multiplication

Grade 5 Math · One minute (or as long as it takes; record the time). Score ____ / 60

6 × 12 = ____	10 × 10 = ____	5 × 4 = ____	10 × 10 = ____
11 × 7 = ____	3 × 6 = ____	7 × 4 = ____	11 × 9 = ____
6 × 8 = ____	9 × 4 = ____	8 × 6 = ____	6 × 10 = ____
7 × 4 = ____	12 × 6 = ____	9 × 7 = ____	7 × 11 = ____
5 × 6 = ____	5 × 3 = ____	9 × 12 = ____	4 × 12 = ____
10 × 7 = ____	10 × 7 = ____	6 × 8 = ____	6 × 5 = ____
10 × 8 = ____	9 × 3 = ____	9 × 4 = ____	9 × 6 = ____
4 × 4 = ____	7 × 8 = ____	8 × 8 = ____	3 × 10 = ____
4 × 6 = ____	5 × 12 = ____	4 × 9 = ____	6 × 7 = ____
8 × 5 = ____	6 × 11 = ____	9 × 8 = ____	12 × 11 = ____
3 × 4 = ____	11 × 11 = ____	7 × 7 = ____	11 × 12 = ____
11 × 6 = ____	7 × 12 = ____	5 × 7 = ____	11 × 6 = ____
5 × 9 = ____	6 × 7 = ____	12 × 3 = ____	6 × 7 = ____
9 × 10 = ____	12 × 12 = ____	7 × 10 = ____	9 × 10 = ____
4 × 4 = ____	3 × 12 = ____	3 × 6 = ____	3 × 3 = ____

Timed Drill Key: Mixed Multiplication

Grade 5 Math · For the parent. Every answer is computer-checked.

6 × 12 = **72**	10 × 10 = **100**	5 × 4 = **20**	10 × 10 = **100**
11 × 7 = **77**	3 × 6 = **18**	7 × 4 = **28**	11 × 9 = **99**
6 × 8 = **48**	9 × 4 = **36**	8 × 6 = **48**	6 × 10 = **60**
7 × 4 = **28**	12 × 6 = **72**	9 × 7 = **63**	7 × 11 = **77**
5 × 6 = **30**	5 × 3 = **15**	9 × 12 = **108**	4 × 12 = **48**
10 × 7 = **70**	10 × 7 = **70**	6 × 8 = **48**	6 × 5 = **30**
10 × 8 = **80**	9 × 3 = **27**	9 × 4 = **36**	9 × 6 = **54**
4 × 4 = **16**	7 × 8 = **56**	8 × 8 = **64**	3 × 10 = **30**
4 × 6 = **24**	5 × 12 = **60**	4 × 9 = **36**	6 × 7 = **42**
8 × 5 = **40**	6 × 11 = **66**	9 × 8 = **72**	12 × 11 = **132**
3 × 4 = **12**	11 × 11 = **121**	7 × 7 = **49**	11 × 12 = **132**
11 × 6 = **66**	7 × 12 = **84**	5 × 7 = **35**	11 × 6 = **66**
5 × 9 = **45**	6 × 7 = **42**	12 × 3 = **36**	6 × 7 = **42**
9 × 10 = **90**	12 × 12 = **144**	7 × 10 = **70**	9 × 10 = **90**
4 × 4 = **16**	3 × 12 = **36**	3 × 6 = **18**	3 × 3 = **9**

Timed Drill: Mixed Division

Grade 5 Math · One minute (or as long as it takes; record the time). Score ____ / 60

88 ÷ 8 = ____
28 ÷ 4 = ____
9 ÷ 3 = ____
33 ÷ 11 = ____
56 ÷ 7 = ____
25 ÷ 5 = ____
84 ÷ 12 = ____
30 ÷ 10 = ____
40 ÷ 8 = ____
54 ÷ 6 = ____
54 ÷ 6 = ____
42 ÷ 6 = ____
96 ÷ 8 = ____
21 ÷ 7 = ____
66 ÷ 11 = ____

27 ÷ 3 = ____
70 ÷ 7 = ____
30 ÷ 10 = ____
42 ÷ 6 = ____
9 ÷ 3 = ____
90 ÷ 10 = ____
72 ÷ 9 = ____
132 ÷ 11 = ____
108 ÷ 12 = ____
42 ÷ 7 = ____
120 ÷ 12 = ____
132 ÷ 12 = ____
49 ÷ 7 = ____
121 ÷ 11 = ____
60 ÷ 5 = ____

40 ÷ 8 = ____
32 ÷ 4 = ____
81 ÷ 9 = ____
20 ÷ 5 = ____
55 ÷ 5 = ____
48 ÷ 8 = ____
48 ÷ 8 = ____
36 ÷ 6 = ____
77 ÷ 7 = ____
99 ÷ 11 = ____
15 ÷ 3 = ____
24 ÷ 6 = ____
28 ÷ 7 = ____
16 ÷ 4 = ____
60 ÷ 10 = ____

60 ÷ 12 = ____
66 ÷ 11 = ____
99 ÷ 9 = ____
60 ÷ 10 = ____
12 ÷ 3 = ____
108 ÷ 12 = ____
36 ÷ 6 = ____
72 ÷ 8 = ____
24 ÷ 3 = ____
36 ÷ 3 = ____
90 ÷ 10 = ____
45 ÷ 9 = ____
49 ÷ 7 = ____
63 ÷ 7 = ____
54 ÷ 6 = ____

Timed Drill Key: Mixed Division

Grade 5 Math · For the parent. Every answer is computer-checked.

88 ÷ 8 = **11**
28 ÷ 4 = **7**
9 ÷ 3 = **3**
33 ÷ 11 = **3**
56 ÷ 7 = **8**
25 ÷ 5 = **5**
84 ÷ 12 = **7**
30 ÷ 10 = **3**
40 ÷ 8 = **5**
54 ÷ 6 = **9**
54 ÷ 6 = **9**
42 ÷ 6 = **7**
96 ÷ 8 = **12**
21 ÷ 7 = **3**
66 ÷ 11 = **6**

27 ÷ 3 = **9**
70 ÷ 7 = **10**
30 ÷ 10 = **3**
42 ÷ 6 = **7**
9 ÷ 3 = **3**
90 ÷ 10 = **9**
72 ÷ 9 = **8**
132 ÷ 11 = **12**
108 ÷ 12 = **9**
42 ÷ 7 = **6**
120 ÷ 12 = **10**
132 ÷ 12 = **11**
49 ÷ 7 = **7**
121 ÷ 11 = **11**
60 ÷ 5 = **12**

40 ÷ 8 = **5**
32 ÷ 4 = **8**
81 ÷ 9 = **9**
20 ÷ 5 = **4**
55 ÷ 5 = **11**
48 ÷ 8 = **6**
48 ÷ 8 = **6**
36 ÷ 6 = **6**
77 ÷ 7 = **11**
99 ÷ 11 = **9**
15 ÷ 3 = **5**
24 ÷ 6 = **4**
28 ÷ 7 = **4**
16 ÷ 4 = **4**
60 ÷ 10 = **6**

60 ÷ 12 = **5**
66 ÷ 11 = **6**
99 ÷ 9 = **11**
60 ÷ 10 = **6**
12 ÷ 3 = **4**
108 ÷ 12 = **9**
36 ÷ 6 = **6**
72 ÷ 8 = **9**
24 ÷ 3 = **8**
36 ÷ 3 = **12**
90 ÷ 10 = **9**
45 ÷ 9 = **5**
49 ÷ 7 = **7**
63 ÷ 7 = **9**
54 ÷ 6 = **9**

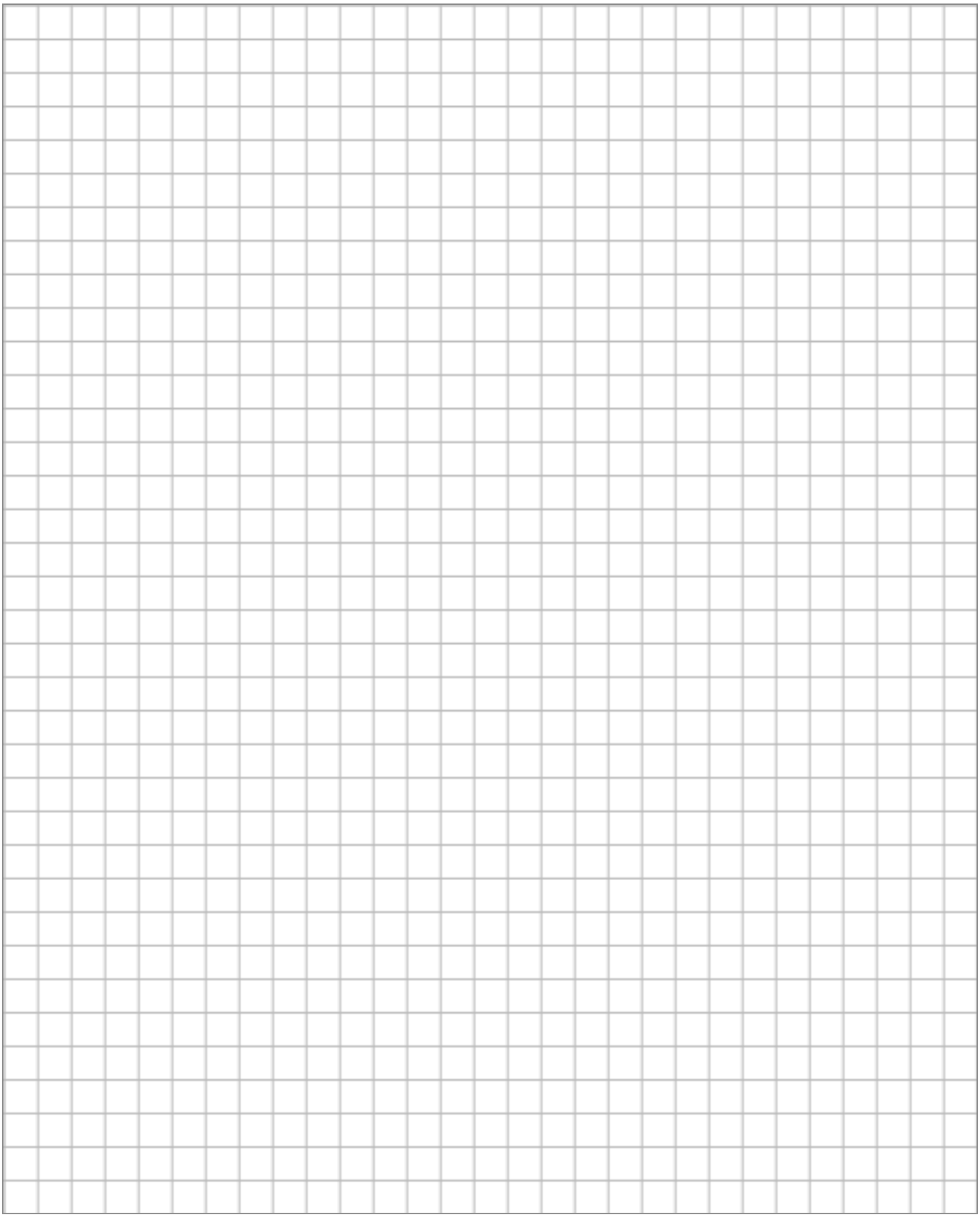
Fact-Mastery Tracker

Grade 5 Math · Each Friday write the score (or a check when every fact is answered in about 3 seconds).

Facts	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8
× to 12								
÷ to 12								
Mixed × and ÷								
× by 10, 100, 1,000								

Graph Paper

Grade 5 Math · One digit per square keeps columns lined up.



Record Sheet

Grade 5 Math · One line per lesson: date finished, Worksheet A score, Worksheet B score, notes.

Lesson	Date	A	B	Notes
1.1 Numbers to Billions				
1.2 Multiplying and Dividing by 10, 100, 1,000				
1.3 Decimals to Thousandths				
1.4 Rounding and Comparing Decimals				
2.1 Multi-Digit Multiplication				
2.2 Long Division with 2-Digit Divisors				
2.3 Estimating Quotients				
2.4 Order of Operations				
3.1 Common Denominators				
3.2 Adding Unlike Fractions				
3.3 Subtracting Unlike Fractions				
3.4 Mixed Numbers with Regrouping				
4.1 Fraction × Whole Number				
4.2 Fraction × Fraction				
4.3 Area with Fractional Sides				
4.4 Dividing with Unit Fractions				
5.1 Adding and Subtracting Decimals				
5.2 Multiplying Decimals				
5.3 Dividing Decimals by Whole Numbers				
5.4 Dividing by Decimals				
6.1 Customary and Metric Conversions				
6.2 Letters for Numbers: Expressions and Formulas				
6.3 Volume with Unit Cubes and Nets				
6.4 Volume = l × w × h				
7.1 Triangles: Angle Sum and Classifying				
7.2 Classifying Quadrilaterals				
7.3 The Coordinate Plane and Patterns				
7.4 Slides, Flips and Turns on the Grid				
8.1 Multi-Step Word Problems				
8.2 Line Plots and Averages				
8.3 Below Zero: Negative Numbers				
8.4 Money and Budgets				
9.1 Ratios and Ratio Tables				
9.2 Percent of a Number				
9.3 Probability Experiments				
9.4 End-of-Year Check and Pre-Algebra Placement				

Placement Check

School Launch · Grade 5 Math · Grade 4 skills: multi-digit ×, long division, fractions, decimals · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. 62 × 53 = ___ MEDIUM

2. 872 ÷ 5 = ___ MEDIUM

3. Round 483,166 to the nearest 1,000. MEDIUM

4. Fill in the missing number: $\frac{1}{5} = \frac{?}{15}$ MEDIUM

5. $\frac{3}{8} + \frac{1}{8}$ = ___ MEDIUM

6. Write $\frac{14}{3}$ as a mixed number. MEDIUM

7. $\frac{4}{5} \times 9$ = ___ MEDIUM

8. Write < or > : 4.77 ___ 3.89 MEDIUM

9. 5 feet = ___ inches MEDIUM

10. A builder needs 8 stones for each of 11 walls. He already has 14 stones. How many more does he need?

HARD

Answer Key · Placement Check

School Launch · Grade 5 Math · Grade 4 skills: multi-digit ×, long division, fractions, decimals · Worksheet A · for the parent

Key

1. 3,286

1. Multiply 62 by each digit of 53, starting with the ones.
2. 62 × 3 = 186
3. 62 × 50 = 3,100 (start this row with 1 zero as a placeholder)
4. Add the rows: 186 + 3,100 = 3,286

62 × 53 = ___

2. 174 R 2

1. How many 5s in 8? 1. 5 × 1 = 5. 8 − 5 = 3. Bring down the 7.
2. How many 5s in 37? 7. 5 × 7 = 35. 37 − 35 = 2. Bring down the 2.
3. How many 5s in 22? 4. 5 × 4 = 20. 22 − 20 = 2.
4. Check: 5 × 174 + 2 = 872

872 ÷ 5 = ___

3. 483,000

1. 483,166 is between 483,000 and 484,000.
2. Look at the hundreds digit: 1. Less than 5, so round down.
3. 483,166 rounds to 483,000.

Round 483,166 to the nearest 1,000.

4. 3

1. The denominator went from 5 to 15: 5 × 3 = 15.
2. Multiply the numerator by 3 too: 1 × 3 = 3
3. $\frac{1}{5} = \frac{3}{15}$

Fill in the missing number: $\frac{1}{5} = \frac{?}{15}$

5. $\frac{1}{2}$

1. The denominators match, so add the numerators: 3 + 1 = 4
2. $\frac{3}{8} + \frac{1}{8} = \frac{4}{8}$
3. Simplify: $\frac{4}{8} = \frac{1}{2}$

$\frac{3}{8} + \frac{1}{8}$ = ___

6. $4\frac{2}{3}$

1. 14 ÷ 3: 3 × 4 = 12, and 14 − 12 = 2
2. 4 wholes and 2 thirds left over: $4\frac{2}{3}$

Write $\frac{14}{3}$ as a mixed number.

7. $7\frac{1}{5}$

1. $\frac{4}{5}$ × 9 means 9 groups of $\frac{4}{5}$: $\frac{4\times9}{5} = \frac{36}{5}$
2. Simplify: $\frac{36}{5} = 7\frac{1}{5}$

$\frac{4}{5}$ × 9 = ___

8. 4.77 > 3.89

1. Line up the points and fill with zeros: 4.77 and 3.89.
2. Compare place by place from the left.
3. 4.77 > 3.89

Write < or > : 4.77 ___ 3.89

9. 60

1. 1 foot = 12 inches, so multiply by 12.
2. 5 × 12 = 60

5 feet = ___ inches

10. 74 stones. He needs 74 more stones.

1. Unknown: the final amount.
2. Two steps: first find the total of the equal groups, then take away the extra.
3. Step 1: 8 × 11 = 88
4. Step 2: 88 − 14 = 74
5. Answer: He needs 74 more stones.

A builder needs 8 stones for each of 11 walls. He already has 14 stones. How many more does he need?

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

Unit 1 Test: Place Value and Powers of Ten

School Launch · Grade 5 Math · Unit 1: Place Value and Powers of Ten · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 12

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. Write 78,006,708 in expanded form. MEDIUM

2. Write <, > or = : 630,193,602 ___ 350,385,910 HARD

3. Write 48,532,231 in expanded form. MEDIUM

4. 34.4 × 1,000 = ___ MEDIUM

5. 427 ÷ 1,000 = ___ HARD

6. 84.7 × 1,000 = ___ MEDIUM

7. In 79.657, what is the value of the digit 6 after the decimal point? MEDIUM

8. Write $\frac{746}{1000}$ as a decimal. HARD

9. In 71.174, what is the value of the digit 1 after the decimal point? MEDIUM

10. Round 10.705 to the nearest tenth. MEDIUM

11. Round 8.208 to the nearest hundredth. HARD

12. Round 64.247 to the nearest tenth. MEDIUM

Answer Key · Unit 1 Test: Place Value and Powers of Ten

School Launch · Grade 5 Math · Unit 1: Place Value and Powers of Ten · Worksheet A · for the parent

Key

1. 70,000,000 + 8,000,000 + 6,000 + 700 + 8

1. Write each digit times its place value: 70,000,000 + 8,000,000 + 6,000 + 700 + 8
2. Check: 70,000,000 + 8,000,000 + 6,000 + 700 + 8 = 78,006,708

Write 78,006,708 in expanded form.

2. 630,193,602 > 350,385,910

1. Compare from the left. The first place that differs is the hundred millions: 6 and 3.
2. 630,193,602 > 350,385,910

Write <, > or = : 630,193,602 ___ 350,385,910

3. 40,000,000 + 8,000,000 + 500,000 + 30,000 + 2,000 + 200 + 30 + 1

1. Write each digit times its place value: 40,000,000 + 8,000,000 + 500,000 + 30,000 + 2,000 + 200 + 30 + 1
2. Check: 40,000,000 + 8,000,000 + 500,000 + 30,000 + 2,000 + 200 + 30 + 1 = 48,532,231

Write 48,532,231 in expanded form.

4. 34,400

1. × 1,000 shifts every digit 3 places left (bigger).
2. 34.4 × 1,000 = 34,400

34.4 × 1,000 = ___

5. 0.427

1. ÷ 1,000 shifts every digit 3 places right (smaller).
2. 427 ÷ 1,000 = 0.427

427 ÷ 1,000 = ___

6. 84,700

1. × 1,000 shifts every digit 3 places left (bigger).
2. 84.7 × 1,000 = 84,700

84.7 × 1,000 = ___

7. 0.6 ($\frac{6}{10}$)

1. The 6 is in the tenths place.
2. 6 tenths = $\frac{6}{10}$ = 0.6

In 79.657, what is the value of the digit 6 after the decimal point?

8. 0.746

1. $\frac{746}{1000}$ is 746 1000ths.
2. 1000ths take 3 places after the point: $\frac{746}{1000}$ = 0.746

Write $\frac{746}{1000}$ as a decimal.

9. 0.1 ($\frac{1}{10}$)

1. The 1 is in the tenths place.
2. 1 tenths = $\frac{1}{10}$ = 0.1

In 71.174, what is the value of the digit 1 after the decimal point?

10. 10.7

1. Look at the digit just right of the tenth place: 0.
2. Less than 5, so round down: 10.705 → 10.7

Round 10.705 to the nearest tenth.

11. 8.21

1. Look at the digit just right of the hundredth place: 8.
2. 5 or more, so round up: 8.208 → 8.21

Round 8.208 to the nearest hundredth.

12. 64.2

1. Look at the digit just right of the tenth place: 4.
2. Less than 5, so round down: 64.247 → 64.2

Round 64.247 to the nearest tenth.

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

Unit 2 Test: Whole-Number Operations

School Launch · Grade 5 Math · Unit 2: Whole-Number Operations · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 12

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. 107 × 91 = ___ MEDIUM

2. A pound of nails costs $1.79. How much do 2 pounds cost? HARD

3. 802 × 90 = ___ MEDIUM

4. 7,458 ÷ 33 = ___ MEDIUM

5. 6,142 ÷ 70 = ___ HARD

6. 5,190 ÷ 30 = ___ MEDIUM

7. 900 ÷ 30 = ___ MEDIUM

8. 34 people need rides to church. Each wagon holds 5. How many wagons are needed so everyone rides? HARD

9. 2,700 ÷ 90 = ___ MEDIUM

10. Use the order of operations: (2 + 3) × 6 MEDIUM

11. Use the order of operations: 132 ÷ 11 − 2 HARD

12. Use the order of operations: 12 × (10 + 8) − 5 MEDIUM

Answer Key · Unit 2 Test: Whole-Number Operations

School Launch · Grade 5 Math · Unit 2: Whole-Number Operations · Worksheet A · for the parent

Key

1. 9,737

1. Multiply 107 by each digit of 91, starting with the ones.
2. 107 × 1 = 107
3. 107 × 90 = 9,630 (start this row with 1 zero as a placeholder)
4. Add the rows: 107 + 9,630 = 9,737

107 × 91 = ___

2. $3.58. 2 pounds cost $3.58.

1. Work in cents: 179 × 2 = 358
2. 358 cents = $3.58

A pound of nails costs $1.79. How much do 2 pounds cost?

3. 72,180

1. Multiply 802 by each digit of 90, starting with the ones.
2. 802 × 0 = 0
3. 802 × 90 = 72,180 (start this row with 1 zero as a placeholder)
4. Add the rows: 0 + 72,180 = 72,180

802 × 90 = ___

4. 226

1. How many 33s in 74? 2. 33 × 2 = 66. 74 − 66 = 8. Bring down the 5.
2. How many 33s in 85? 2. 33 × 2 = 66. 85 − 66 = 19. Bring down the 8.
3. How many 33s in 198? 6. 33 × 6 = 198. 198 − 198 = 0.
4. Check: 33 × 226 = 7,458

7,458 ÷ 33 = ___

5. 87 R 52

1. How many 70s in 614? 8. 70 × 8 = 560. 614 − 560 = 54. Bring down the 2.
2. How many 70s in 542? 7. 70 × 7 = 490. 542 − 490 = 52.
3. Check: 70 × 87 + 52 = 6,142

6,142 ÷ 70 = ___

6. 173

1. How many 30s in 51? 1. 30 × 1 = 30. 51 − 30 = 21. Bring down the 9.
2. How many 30s in 219? 7. 30 × 7 = 210. 219 − 210 = 9. Bring down the 0.
3. How many 30s in 90? 3. 30 × 3 = 90. 90 − 90 = 0.
4. Check: 30 × 173 = 5,190

5,190 ÷ 30 = ___

7. 30

1. Think multiplication: 30 × ___ = 900
2. 30 × 30 = 900

900 ÷ 30 = ___

8. 7

1. 34 ÷ 5: 5 × 6 = 30, and 34 − 30 = 4. So 34 ÷ 5 is 6 R 4.
2. 6 full wagons leave 4 people behind, so one more wagon is needed: 6 + 1 = 7.

34 people need rides to church. Each wagon holds 5. How many wagons are needed so everyone rides?

9. 30

1. Think multiplication: 90 × ___ = 2700
2. 90 × 30 = 2700

2,700 ÷ 90 = ___

10. 30

1. Parentheses first: 2 + 3 = 5
2. Then multiply: 5 × 6 = 30

Use the order of operations: (2 + 3) × 6

11. 10

1. Divide first: 132 ÷ 11 = 12
2. Then subtract: 12 − 2 = 10

Use the order of operations: 132 ÷ 11 − 2

12. 211

1. Parentheses: 10 + 8 = 18
2. Multiply: 12 × 18 = 216
3. Subtract: 216 − 5 = 211

Use the order of operations: 12 × (10 + 8) − 5

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

Unit 3 Test: Adding and Subtracting Fractions

School Launch · Grade 5 Math · Unit 3: Adding and Subtracting Fractions · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 12

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. Fill in the missing number: $\frac{2}{3} = \frac{?}{9}$ MEDIUM

2. Write < or > : $\frac{2}{5}$ ___ $\frac{7}{10}$ HARD

3. Fill in the missing number: $\frac{1}{3} = \frac{?}{12}$ MEDIUM

4. $\frac{1}{2} + \frac{3}{10} =$ ___ MEDIUM

5. A cook used $\frac{2}{3}$ cup of flour for bread and $\frac{1}{3}$ cup for biscuits. How much flour did she use? HARD

6. $\frac{3}{5} + \frac{1}{2} =$ ___ MEDIUM

7. $\frac{4}{5} - \frac{7}{12} =$ ___ MEDIUM

8. A rope is $\frac{1}{2}$ yard long. Peter cuts off $\frac{3}{8}$ yard. How long is the rope now? HARD

9. $\frac{3}{4} - \frac{2}{5} =$ ___ MEDIUM

10. $4\frac{1}{2} - 3\frac{1}{8} =$ ___ MEDIUM

11. $4\frac{1}{2} - 1\frac{3}{4} =$ ___ HARD

12. $1\frac{3}{8} - 1\frac{1}{3} =$ ___ MEDIUM

Answer Key · Unit 3 Test: Adding and Subtracting Fractions

School Launch · Grade 5 Math · Unit 3: Adding and Subtracting Fractions · Worksheet A · for the parent

Key

1. 6

1. The denominator went from 3 to 9: 3 × 3 = 9.
2. Multiply the numerator by 3 too: 2 × 3 = 6
3. $\frac{2}{3} = \frac{6}{9}$

Fill in the missing number: $\frac{2}{3} = \frac{?}{9}$

2. $\frac{2}{5} < \frac{7}{10}$

1. Use the common denominator 10: $\frac{2}{5} = \frac{4}{10}$ and $\frac{7}{10} = \frac{7}{10}$.
2. $\frac{2}{5} < \frac{7}{10}$

Write < or > : $\frac{2}{5}$ ___ $\frac{7}{10}$

3. 4

1. The denominator went from 3 to 12: 3 × 4 = 12.
2. Multiply the numerator by 4 too: 1 × 4 = 4
3. $\frac{1}{3} = \frac{4}{12}$

Fill in the missing number: $\frac{1}{3} = \frac{?}{12}$

4. $\frac{4}{5}$

1. The least common denominator of 2 and 10 is 10.
2. $\frac{1}{2} = \frac{5}{10}$ and $\frac{3}{10} = \frac{3}{10}$
3. $\frac{5}{10} + \frac{3}{10} = \frac{8}{10}$
4. Simplify: $\frac{8}{10} = \frac{4}{5}$

$\frac{1}{2} + \frac{3}{10} =$ ___

5. 1 cup. She used 1 cup of flour.

1. Unknown: the total.
2. $\frac{2}{3} + \frac{1}{3} = \frac{3}{3} = 1$
3. Answer: She used 1 cup of flour.

A cook used $\frac{2}{3}$ cup of flour for bread and $\frac{1}{3}$ cup for biscuits. How much flour did she use?

6. $1\frac{1}{10}$

1. The least common denominator of 5 and 2 is 10.
2. $\frac{3}{5} = \frac{6}{10}$ and $\frac{1}{2} = \frac{5}{10}$
3. $\frac{6}{10} + \frac{5}{10} = \frac{11}{10}$
4. Simplify: $\frac{11}{10} = 1\frac{1}{10}$

$\frac{3}{5} + \frac{1}{2} =$ ___

7. $\frac{13}{60}$

1. The least common denominator of 5 and 12 is 60.
2. $\frac{4}{5} = \frac{48}{60}$ and $\frac{7}{12} = \frac{35}{60}$
3. $\frac{48}{60} - \frac{35}{60} = \frac{13}{60}$

$\frac{4}{5} - \frac{7}{12} =$ ___

8. $\frac{1}{8}$ yard. The rope is $\frac{1}{8}$ yard long now.

1. Unknown: how much is left.
2. Common denominator 8: $\frac{1}{2} = \frac{4}{8}$, $\frac{3}{8} = \frac{3}{8}$
3. $\frac{4}{8} - \frac{3}{8} = \frac{1}{8}$
4. Answer: The rope is $\frac{1}{8}$ yard long now.

A rope is $\frac{1}{2}$ yard long. Peter cuts off $\frac{3}{8}$ yard. How long is the rope now?

9. $\frac{7}{20}$

1. The least common denominator of 4 and 5 is 20.
2. $\frac{3}{4} = \frac{15}{20}$ and $\frac{2}{5} = \frac{8}{20}$
3. $\frac{15}{20} - \frac{8}{20} = \frac{7}{20}$

$\frac{3}{4} - \frac{2}{5} =$ ___

10. $1\frac{3}{8}$

1. Common denominator 8: $\frac{1}{2} = \frac{4}{8}$ and $\frac{1}{8} = \frac{1}{8}$.
2. Whole numbers: 4 − 3 = 1
3. Fractions: $\frac{4}{8} - \frac{1}{8} = \frac{3}{8}$

$4\frac{1}{2} - 3\frac{1}{8} =$ ___

11. $2\frac{3}{4}$

1. Common denominator 4: $\frac{1}{2} = \frac{2}{4}$ and $\frac{3}{4} = \frac{3}{4}$.
2. $\frac{2}{4}$ is less than $\frac{3}{4}$, so regroup 1 whole as $\frac{4}{4}$: 4 and $\frac{2}{4}$ becomes 3 and $\frac{6}{4}$.
3. Whole numbers: 3 − 1 = 2
4. Fractions: $\frac{6}{4} - \frac{3}{4} = \frac{3}{4}$

$4\frac{1}{2} - 1\frac{3}{4} =$ ___

12. $\frac{1}{24}$

1. Common denominator 24: $\frac{3}{8} = \frac{9}{24}$ and $\frac{1}{3} = \frac{8}{24}$.
2. Whole numbers: 1 − 1 = 0
3. Fractions: $\frac{9}{24} - \frac{8}{24} = \frac{1}{24}$

$1\frac{3}{8} - 1\frac{1}{3} =$ ___

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

Unit 4 Test: Multiplying and Dividing Fractions

School Launch · Grade 5 Math · Unit 4: Multiplying and Dividing Fractions · Worksheet A

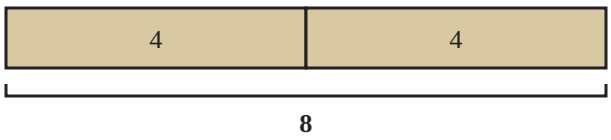
No calculator

Name _____ Date _____ Score _____ / 12

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. What is $\frac{5}{8}$ of 32? MEDIUM

2. A baker made 8 rolls and sold $\frac{1}{2}$ of them by noon. How many rolls did she sell? HARD



3. What is $\frac{5}{8}$ of 48? MEDIUM

4. $\frac{1}{3} \times \frac{2}{3} =$ ___ MEDIUM

5. $3\frac{1}{3} \times \frac{3}{4} =$ ___ HARD

6. $\frac{1}{2} \times \frac{2}{3} =$ ___ MEDIUM

7. Find the area of a rectangle $\frac{3}{4}$ ft long and $1\frac{2}{3}$ ft wide. MEDIUM

8. Find the area of a rectangle $1\frac{1}{4}$ ft long and $2\frac{1}{2}$ ft wide. HARD

9. Find the area of a rectangle $\frac{1}{2}$ ft long and $1\frac{1}{2}$ ft wide. MEDIUM

10. $\frac{1}{8} \div 2 =$ ___ MEDIUM

11. $\frac{1}{2} \div 2 =$ ___ HARD

12. $\frac{1}{6} \div 5 =$ ___ MEDIUM

Answer Key · Unit 4 Test: Multiplying and Dividing Fractions

School Launch · Grade 5 Math · Unit 4: Multiplying and Dividing Fractions · Worksheet A · for the parent

Key

1. 20

1. Find one eighth: 32 ÷ 8 = 4
2. Take 5 of them: 4 × 5 = 20

What is $\frac{5}{8}$ of 32?

2. 4 rolls. She sold 4 rolls.

1. Unknown: the part.
2. Bar model: 8 split into 2 equal parts; take 1 of them.
3. One part: 8 ÷ 2 = 4
4. 1 parts: 4 × 1 = 4
5. Answer: She sold 4 rolls.

A baker made 8 rolls and sold $\frac{1}{2}$ of them by noon. How many rolls did she sell?

3. 30

1. Find one eighth: 48 ÷ 8 = 6
2. Take 5 of them: 6 × 5 = 30

What is $\frac{5}{8}$ of 48?

4. $\frac{2}{9}$

1. Multiply tops and bottoms: $\frac{1\times2}{3\times3} = \frac{2}{9}$

$\frac{1}{3} \times \frac{2}{3} =$ ___

5. $2\frac{1}{2}$

1. Change to an improper fraction: $3\frac{1}{3} = \frac{10}{3}$
2. Multiply tops and bottoms: $\frac{10\times3}{3\times4} = \frac{30}{12}$
3. Simplify: $\frac{30}{12} = 2\frac{1}{2}$

$3\frac{1}{3} \times \frac{3}{4} =$ ___

6. $\frac{1}{3}$

1. Multiply tops and bottoms: $\frac{1\times2}{2\times3} = \frac{2}{6}$
2. Simplify: $\frac{2}{6} = \frac{1}{3}$

$\frac{1}{2} \times \frac{2}{3} =$ ___

7. $1\frac{1}{4}$ square feet

1. Area = length × width
2. $\frac{3}{4} \times \frac{5}{3} = \frac{15}{12} = 1\frac{1}{4}$

Find the area of a rectangle $\frac{3}{4}$ ft long and $1\frac{2}{3}$ ft wide.

8. $3\frac{1}{8}$ square feet

1. Area = length × width
2. $\frac{5}{4} \times \frac{5}{2} = \frac{25}{8} = 3\frac{1}{8}$

Find the area of a rectangle $1\frac{1}{4}$ ft long and $2\frac{1}{2}$ ft wide.

9. $\frac{3}{4}$ square feet

1. Area = length × width
2. $\frac{1}{2} \times \frac{3}{2} = \frac{3}{4} = \frac{3}{4}$

Find the area of a rectangle $\frac{1}{2}$ ft long and $1\frac{1}{2}$ ft wide.

10. $\frac{1}{16}$

1. Split one eighth into 2 equal parts.
2. 8 × 2 = 16, so each part is $\frac{1}{16}$ of the whole.
3. Check: $\frac{1}{16} \times 2 = \frac{2}{16} = \frac{1}{8}$

$\frac{1}{8} \div 2 =$ ___

11. $\frac{1}{4}$

1. Split one half into 2 equal parts.
2. 2 × 2 = 4, so each part is $\frac{1}{4}$ of the whole.
3. Check: $\frac{1}{4} \times 2 = \frac{2}{4} = \frac{1}{2}$

$\frac{1}{2} \div 2 =$ ___

12. $\frac{1}{30}$

1. Split one sixth into 5 equal parts.
2. 6 × 5 = 30, so each part is $\frac{1}{30}$ of the whole.
3. Check: $\frac{1}{30} \times 5 = \frac{5}{30} = \frac{1}{6}$

$\frac{1}{6} \div 5 =$ ___

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

Unit 5 Test: Decimal Operations

School Launch · Grade 5 Math · Unit 5: Decimal Operations · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 12

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. 25.39 − 4.6 = ___ MEDIUM

2. A farmer drives 8.2 miles to the mill and 8.7 miles to town. How far does he drive? HARD

3. 91.31 − 42.4 = ___ MEDIUM

4. 6.1 × 2 = ___ MEDIUM

5. A yard of cloth costs $7.91. How much do 5 yards cost? HARD

6. 3.71 × 1.4 = ___ MEDIUM

7. 4.41 ÷ 7 = ___ MEDIUM

8. 0.57 ÷ 3 = ___ HARD

9. 2.61 ÷ 3 = ___ MEDIUM

10. 2.6 ÷ 0.5 = ___ MEDIUM

11. 3.6 ÷ 0.9 = ___ HARD

12. 2.31 ÷ 0.7 = ___ MEDIUM

Answer Key · Unit 5 Test: Decimal Operations

School Launch · Grade 5 Math · Unit 5: Decimal Operations · Worksheet A · for the parent

Key

1. 20.79

1. Line up the decimal points: 25.39 − 4.60
2. Subtract as whole numbers (in hundredths): 2539 − 460 = 2079
3. Put the point back, 2 places from the right: 20.79

25.39 − 4.6 = ___

2. 16.9 miles. He drives 16.9 miles.

1. Line up the points: 8.2 + 8.7 = 16.9

A farmer drives 8.2 miles to the mill and 8.7 miles to town. How far does he drive?

3. 48.91

1. Line up the decimal points: 91.31 − 42.40
2. Subtract as whole numbers (in hundredths): 9131 − 4240 = 4891
3. Put the point back, 2 places from the right: 48.91

91.31 − 42.4 = ___

4. 12.2

1. Multiply as whole numbers: 61 × 2 = 122
2. Count decimal places: 1 + 0 = 1
3. Put the point 1 place from the right: 12.2

6.1 × 2 = ___

5. $39.55. 5 yards cost $39.55.

1. 791 × 5 = 3955 cents
2. = $39.55

A yard of cloth costs $7.91. How much do 5 yards cost?

6. 5.194

1. Multiply as whole numbers: 371 × 14 = 5194
2. Count decimal places: 2 + 1 = 3
3. Put the point 3 places from the right: 5.194

3.71 × 1.4 = ___

7. 0.63

1. Divide as with whole numbers and put the point straight above: 4.41 ÷ 7 = 0.63
2. Check: 0.63 × 7 = 4.41

4.41 ÷ 7 = ___

8. 0.19

1. Divide as with whole numbers and put the point straight above: 0.57 ÷ 3 = 0.19
2. Check: 0.19 × 3 = 0.57

0.57 ÷ 3 = ___

9. 0.87

1. Divide as with whole numbers and put the point straight above: 2.61 ÷ 3 = 0.87
2. Check: 0.87 × 3 = 2.61

2.61 ÷ 3 = ___

10. 5.2

1. Move both points one place right: 2.6 ÷ 0.5 becomes 26 ÷ 5
2. 26 ÷ 5 = 5.2
3. Check: 5.2 × 0.5 = 2.6

2.6 ÷ 0.5 = ___

11. 4

1. Move both points one place right: 3.6 ÷ 0.9 becomes 36 ÷ 9
2. 36 ÷ 9 = 4
3. Check: 4 × 0.9 = 3.6

3.6 ÷ 0.9 = ___

12. 3.3

1. Move both points one place right: 2.31 ÷ 0.7 becomes 23.1 ÷ 7
2. 23.1 ÷ 7 = 3.3
3. Check: 3.3 × 0.7 = 2.31

2.31 ÷ 0.7 = ___

Unit 6 Test: Measurement and Volume

School Launch · Grade 5 Math · Unit 6: Measurement and Volume · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 12

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. 13,000 meters = ___ kilometers MEDIUM

2. 5 yards 2 feet = ___ feet HARD

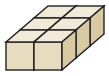
3. 1,100 centimeters = ___ meters MEDIUM

4. Solve: n + 3 = 7. What number is n? MEDIUM

5. The formula for the perimeter of a rectangle is P = 2 × l + 2 × w. Find P when l = 4 m and w = 11 m. HARD

6. Solve: n + 4 = 9. What number is n? MEDIUM

7. How many unit cubes build this prism? What is its volume? MEDIUM



8. A net is made of 1 square, 4 triangles. What solid does it fold into? (cube, rectangular prism, triangular prism, square pyramid, triangular pyramid) HARD

9. How many unit cubes build this prism? What is its volume? MEDIUM



10. A grain bin shaped like a box holds 36 cubic feet. It is 3 ft long and 3 ft wide. How tall is it? HARD

11. A shed is made of two box shapes: 5 ft × 10 ft × 5 ft and 3 ft × 5 ft × 4 ft. What is its total volume? HARD

12. A grain bin shaped like a box holds 105 cubic feet. It is 5 ft long and 7 ft wide. How tall is it? HARD

Answer Key · Unit 6 Test: Measurement and Volume

School Launch · Grade 5 Math · Unit 6: Measurement and Volume · Worksheet A · for the parent

Key

1. 13

1. 1 kilometer = 1,000 meters, so divide by 1,000.
2. 13,000 ÷ 1,000 = 13

13,000 meters = ___ kilometers

2. 17

1. 1 yard = 3 feet: 5 × 3 = 15
2. 15 + 2 = 17

5 yards 2 feet = ___ feet

3. 11

1. 1 meter = 100 centimeters, so divide by 100.
2. 1,100 ÷ 100 = 11

1,100 centimeters = ___ meters

4. n = 4

1. Ask: what number plus 3 makes 7?
2. 7 − 3 = 4
3. Check: 4 + 3 = 7

Solve: n + 3 = 7. What number is n?

5. 30 m

1. P = 2 × 4 + 2 × 11
2. 2 × 4 = 8
3. 2 × 11 = 22
4. 8 + 22 = 30

The formula for the perimeter of a rectangle is P = 2 × l + 2 × w. Find P when l = 4 m and w = 11 m.

6. n = 5

1. Ask: what number plus 4 makes 9?
2. 9 − 4 = 5
3. Check: 5 + 4 = 9

Solve: n + 4 = 9. What number is n?

7. 6 cubic units

1. One layer: 2 × 3 = 6 cubes
2. 1 layer: 6 × 1 = 6
3. Volume = 6 cubic units

How many unit cubes build this prism? What is its volume?

8. square pyramid

1. Count the faces: 5.
2. Look at their shapes: 1 square, 4 triangles.
3. That is a square pyramid.

A net is made of 1 square, 4 triangles. What solid does it fold into? (cube, rectangular prism, triangular prism, square pyramid, triangular pyramid)

9. 3 cubic units

1. One layer: 3 × 1 = 3 cubes
2. 1 layer: 3 × 1 = 3
3. Volume = 3 cubic units

How many unit cubes build this prism? What is its volume?

10. 4 ft

1. Base area: 3 × 3 = 9
2. 36 ÷ 9 = 4

A grain bin shaped like a box holds 36 cubic feet. It is 3 ft long and 3 ft wide. How tall is it?

11. 310 cubic feet

1. 5 × 10 × 5 = 250
2. 3 × 5 × 4 = 60
3. 250 + 60 = 310

A shed is made of two box shapes: 5 ft × 10 ft × 5 ft and 3 ft × 5 ft × 4 ft. What is its total volume?

12. 3 ft

1. Base area: 5 × 7 = 35
2. 105 ÷ 35 = 3

A grain bin shaped like a box holds 105 cubic feet. It is 5 ft long and 7 ft wide. How tall is it?

Unit 7 Test: Geometry and the Coordinate Plane

School Launch · Grade 5 Math · Unit 7: Geometry and the Coordinate Plane · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 12

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. Two angles of a triangle are 33° and 57°. What is the third angle? MEDIUM

2. Three angles of a four-sided shape are 117°, 73° and 92°. What is the fourth angle? HARD

3. Two angles of a triangle are 45° and 70°. What is the third angle? MEDIUM

4. A quadrilateral has four right angles, but its sides are not all equal. What is its most exact name? MEDIUM

5. A regular octagon has sides 2 cm long. What is its perimeter? HARD

6. A quadrilateral has four equal sides, but no right angles. What is its most exact name? MEDIUM

7. Rule table: 9 → 54, 7 → 42, 1 → 6, 2 → ___. What is the missing output? MEDIUM

8. Point A is at (2, 1) and point B is at (2, 4). How many units apart are they? HARD

9. Rule table: 8 → 56, 3 → 21, 2 → 14, 9 → ___. What is the missing output? MEDIUM

10. Slide (translate) the point (6, 2) 3 right and 0 up. Where does it land? MEDIUM

11. Flip (reflect) the point (6, 1) over the line x = 8, as in a mirror. Where does it land? HARD

12. Slide (translate) the point (3, 2) 2 right and 0 up. Where does it land? MEDIUM

Answer Key · Unit 7 Test: Geometry and the Coordinate Plane

School Launch · Grade 5 Math · Unit 7: Geometry and the Coordinate Plane · Worksheet A · for the parent

Key

1. 90°

1. The three angles of any triangle add up to 180°.
2. 33 + 57 = 90
3. 180 − 90 = 90

Two angles of a triangle are 33° and 57°. What is the third angle?

2. 78°

1. A quadrilateral splits into two triangles, so its angles add to 2 × 180 = 360°.
2. 117 + 73 + 92 = 282
3. 360 − 282 = 78

Three angles of a four-sided shape are 117°, 73° and 92°. What is the fourth angle?

3. 65°

1. The three angles of any triangle add up to 180°.
2. 45 + 70 = 115
3. 180 − 115 = 65

Two angles of a triangle are 45° and 70°. What is the third angle?

4. rectangle

1. Four right angles, but its sides are not all equal: that is a rectangle.

A quadrilateral has four right angles, but its sides are not all equal. What is its most exact name?

5. 16 cm

1. A octagon has 8 equal sides.
2. 8 × 2 = 16
3. Perimeter = 16 cm

A regular octagon has sides 2 cm long. What is its perimeter?

6. rhombus

1. Four equal sides, but no right angles: that is a rhombus.

A quadrilateral has four equal sides, but no right angles. What is its most exact name?

7. 12

1. 9 × 6 = 54, so the rule is “× 6”.
2. 2 × 6 = 12

Rule table: 9 → 54, 7 → 42, 1 → 6, 2 → ___. What is the missing output?

8. 3

1. The x-coordinates match, so the points are on one up-and-down line.
2. 4 − 1 = 3

Point A is at (2, 1) and point B is at (2, 4). How many units apart are they?

9. 63

1. 8 × 7 = 56, so the rule is “× 7”.
2. 9 × 7 = 63

Rule table: 8 → 56, 3 → 21, 2 → 14, 9 → ___. What is the missing output?

10. (9, 2)

1. Right adds to x: 6 + 3 = 9
2. Up adds to y: 2 + 0 = 2

Slide (translate) the point (6, 2) 3 right and 0 up. Where does it land?

11. (10, 1)

1. The point is 8 − 6 = 2 units left of the mirror line.
2. Its image is 2 units to the right: 8 + 2 = 10
3. A flip over an up-and-down line keeps y the same: 1.

Flip (reflect) the point (6, 1) over the line x = 8, as in a mirror. Where does it land?

12. (5, 2)

1. Right adds to x: 3 + 2 = 5
2. Up adds to y: 2 + 0 = 2

Slide (translate) the point (3, 2) 2 right and 0 up. Where does it land?

Unit 8 Test: Problem Solving and Data

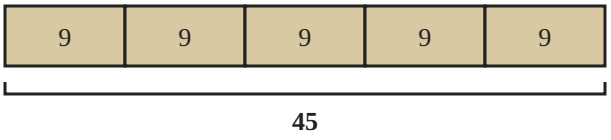
School Launch · Grade 5 Math · Unit 8: Problem Solving and Data · Worksheet A

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Name _____ Date _____ Score _____ / 12

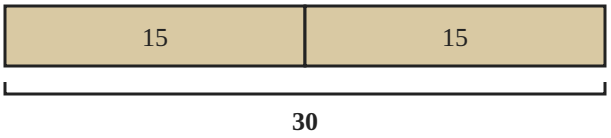
Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. Jesus fed the crowd, and the disciples gathered 45 baskets of pieces. If $\frac{1}{5}$ of the baskets held bread and the rest fish, how many baskets held bread? HARD



2. A yard of cloth costs $8.76. How much do 6 yards cost? HARD

3. Jesus fed the crowd, and the disciples gathered 30 baskets of pieces. If $\frac{1}{2}$ of the baskets held bread and the rest fish, how many baskets held bread? HARD



4. Find the average (mean) of 12, 13, 20, 3. MEDIUM

5. Find the average (mean) of 14, 48, 75, 20, 58. HARD

6. Find the average (mean) of 14, 12, 18, 12. MEDIUM

7. Use the number line: start at 5 and move 6 to the left. Where do you land? MEDIUM

8. The thermometer reads minus 1 °F at dawn. By night it is 15 degrees colder. What does it read now? HARD

9. Use the number line: start at 2 and move 5 to the left. Where do you land? MEDIUM

10. A yard of cloth costs $6.89. How much do 5 yards cost? HARD

11. A farmer drives 4.5 miles to the mill and 3.3 miles to town. How far does he drive? HARD

12. A yard of cloth costs $7.22. How much do 2 yards cost? HARD

Answer Key · Unit 8 Test: Problem Solving and Data

School Launch · Grade 5 Math · Unit 8: Problem Solving and Data · Worksheet A · for the parent

Key

1. 9 baskets. 9 baskets held bread.

1. Unknown: the part.
2. Bar model: 45 split into 5 equal parts; take 1 of them.
3. One part: 45 ÷ 5 = 9
4. 1 parts: 9 × 1 = 9
5. Answer: 9 baskets held bread.

Jesus fed the crowd, and the disciples gathered 45 baskets of pieces. If $\frac{1}{5}$ of the baskets held bread and the rest fish, how many baskets held bread?

2. $52.56. 6 yards cost $52.56.

1. 876 × 6 = 5256 cents
2. = $52.56

A yard of cloth costs $8.76. How much do 6 yards cost?

3. 15 baskets. 15 baskets held bread.

1. Unknown: the part.
2. Bar model: 30 split into 2 equal parts; take 1 of them.
3. One part: 30 ÷ 2 = 15
4. 1 parts: 15 × 1 = 15
5. Answer: 15 baskets held bread.

Jesus fed the crowd, and the disciples gathered 30 baskets of pieces. If $\frac{1}{2}$ of the baskets held bread and the rest fish, how many baskets held bread?

4. 12

1. Add them: 12 + 13 + 20 + 3 = 48
2. Divide by how many there are: 48 ÷ 4 = 12

Find the average (mean) of 12, 13, 20, 3.

5. 43

1. Add them: 14 + 48 + 75 + 20 + 58 = 215
2. Divide by how many there are: 215 ÷ 5 = 43

Find the average (mean) of 14, 48, 75, 20, 58.

6. 14

1. Add them: 14 + 12 + 18 + 12 = 56
2. Divide by how many there are: 56 ÷ 4 = 14

Find the average (mean) of 14, 12, 18, 12.

7. -1

1. 5 steps left reaches 0.
2. 6 − 5 = 1 more steps left of 0.
3. You land on -1.

Use the number line: start at 5 and move 6 to the left. Where do you land?

8. -16 °F (16 below zero)

1. Start at minus 1 on the number line.
2. Count 15 down.
3. It reads -16, that is 16 below zero.

The thermometer reads minus 1 °F at dawn. By night it is 15 degrees colder. What does it read now?

9. -3

1. 2 steps left reaches 0.
2. 5 − 2 = 3 more steps left of 0.
3. You land on -3.

Use the number line: start at 2 and move 5 to the left. Where do you land?

10. $34.45. 5 yards cost $34.45.

1. 689 × 5 = 3445 cents
2. = $34.45

A yard of cloth costs $6.89. How much do 5 yards cost?

11. 7.8 miles. He drives 7.8 miles.

1. Line up the points: 4.5 + 3.3 = 7.8

A farmer drives 4.5 miles to the mill and 3.3 miles to town. How far does he drive?

12. $14.44. 2 yards cost $14.44.

1. 722 × 2 = 1444 cents
2. = $14.44

A yard of cloth costs $7.22. How much do 2 yards cost?

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

Unit 9 Test: Ratio, Percent and Probability

School Launch · Grade 5 Math · Unit 9: Ratio, Percent and Probability · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 12

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. The ratio of scoops of oats to cups of water is 1 : 2. There are 3 scoops of oats. How many scoops of oats and cups of water are there in all? MEDIUM

2. Beads are strung 4 red to every 5 white. A necklace has 27 beads. How many are red? HARD

3. The ratio of scoops of oats to cups of water is 3 : 4. There are 15 scoops of oats. How many scoops of oats and cups of water are there in all? MEDIUM

4. Write 15% as a fraction in simplest form. MEDIUM

5. What is 30% of 20 sheep? HARD

6. Write 5% as a fraction in simplest form. MEDIUM

7. A bag holds 4 green, 5 yellow marbles. You pick one without looking. Is picking a green marble impossible, unlikely, an even chance, likely or certain? MEDIUM

8. Daniel spun a spinner 20 times and got blue 8 times. What fraction of the tries gave blue? HARD

9. A bag holds 6 green, 7 blue marbles. You pick one without looking. Is picking any color impossible, unlikely, an even chance, likely or certain? MEDIUM

10. Use the order of operations: 7 + 12 × 5 MEDIUM

11. 3,900 ÷ 20 = ___ MEDIUM

12. $\frac{3}{4} - \frac{2}{3}$ = ___ MEDIUM

Answer Key · Unit 9 Test: Ratio, Percent and Probability

School Launch · Grade 5 Math · Unit 9: Ratio, Percent and Probability · Worksheet A · for the parent

Key

1. 9 in all

1. 3 ÷ 1 = 3
2. Cups of water: 2 × 3 = 6
3. 3 + 6 = 9

The ratio of scoops of oats to cups of water is 1 : 2. There are 3 scoops of oats. How many scoops of oats and cups of water are there in all?

2. 12 red beads

1. Each group has 4 + 5 = 9 beads.
2. 27 ÷ 9 = 3 groups.
3. 4 × 3 = 12

Beads are strung 4 red to every 5 white. A necklace has 27 beads. How many are red?

3. 35 in all

1. 15 ÷ 3 = 5
2. Cups of water: 4 × 5 = 20
3. 15 + 20 = 35

The ratio of scoops of oats to cups of water is 3 : 4. There are 15 scoops of oats. How many scoops of oats and cups of water are there in all?

4. $\frac{3}{20}$

1. 15% = $\frac{15}{100}$
2. Divide top and bottom by 5: $\frac{15}{100} = \frac{3}{20}$

Write 15% as a fraction in simplest form.

5. 6 sheep

1. 30% means 30 out of every 100, or $\frac{30}{100}$.
2. 20 ÷ 100 = 0.2
3. 0.2 × 30 = 6

What is 30% of 20 sheep?

6. $\frac{1}{20}$

1. 5% = $\frac{5}{100}$
2. Divide top and bottom by 5: $\frac{5}{100} = \frac{1}{20}$

Write 5% as a fraction in simplest form.

7. unlikely

1. There are 4 + 5 = 9 marbles.
2. 4 of the 9 are green.
3. So it is unlikely.

A bag holds 4 green, 5 yellow marbles. You pick one without looking. Is picking a green marble impossible, unlikely, an even chance, likely or certain?

8. $\frac{8}{20} = \frac{2}{5}$

1. Tries: 20. Times with blue: 8.
2. Fraction = 8 ÷ 20 = $\frac{8}{20}$
3. Simplify: $\frac{8}{20} = \frac{2}{5}$

Daniel spun a spinner 20 times and got blue 8 times. What fraction of the tries gave blue?

9. certain

1. There are 6 + 7 = 13 marbles.
2. 13 of the 13 are any color.
3. So it is certain.

A bag holds 6 green, 7 blue marbles. You pick one without looking. Is picking any color impossible, unlikely, an even chance, likely or certain?

10. 67

1. Multiply first: 12 × 5 = 60
2. Then add: 7 + 60 = 67

Use the order of operations: 7 + 12 × 5

11. 195

1. How many 20s in 39? 1. 20 × 1 = 20. 39 − 20 = 19. Bring down the 0.
2. How many 20s in 190? 9. 20 × 9 = 180. 190 − 180 = 10. Bring down the 0.
3. How many 20s in 100? 5. 20 × 5 = 100. 100 − 100 = 0.
4. Check: 20 × 195 = 3,900

3,900 ÷ 20 = ___

12. $\frac{1}{12}$

1. The least common denominator of 4 and 3 is 12.
2. $\frac{3}{4} = \frac{9}{12}$ and $\frac{2}{3} = \frac{8}{12}$
3. $\frac{9}{12} - \frac{8}{12} = \frac{1}{12}$

$\frac{3}{4} - \frac{2}{3}$ = ___

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

Midterm Exam

School Launch · Grade 5 Math · Units 1–4 · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 16

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. Write <, > or = : 827,954,642 ___ 472,729,735 HARD

2. 234 ÷ 100 = ___ HARD

3. Write $\frac{649}{1000}$ as a decimal. HARD

4. Round 8.142 to the nearest hundredth. HARD

5. A pound of nails costs $0.85. How much do 2 pounds cost? HARD

6. 3,845 ÷ 76 = ___ HARD

7. A baker has 65 eggs. Each cake takes 8 eggs. How many whole cakes can she bake? HARD

8. Use the order of operations: 8 × (6 + 3) − 11 HARD

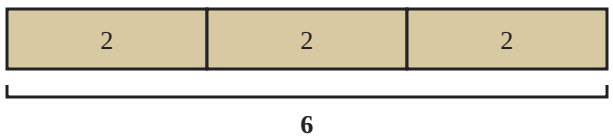
9. Write < or > : $\frac{7}{8}$ ___ $\frac{1}{3}$ HARD

10. A cook used $\frac{1}{3}$ cup of flour for bread and $\frac{2}{3}$ cup for biscuits. How much flour did she use? HARD

11. A jug held $\frac{2}{3}$ gallon of milk. The family drank $\frac{1}{3}$ gallon. How much milk is left? HARD

12. $2\frac{1}{3} - 1\frac{1}{2}$ = ___ HARD

13. Jesus fed the crowd, and the disciples gathered 6 baskets of pieces. If $\frac{2}{3}$ of the baskets held bread and the rest fish, how many baskets held bread? HARD



14. $1\frac{1}{2} \times \frac{1}{2}$ = ___ HARD

15. Find the area of a rectangle $1\frac{1}{2}$ ft long and $1\frac{2}{3}$ ft wide. HARD

16. $\frac{1}{3} \div 3$ = ___ HARD

Answer Key · Midterm Exam

School Launch · Grade 5 Math · Units 1–4 · Worksheet A · for the parent

Key

1. 827,954,642 > 472,729,735

1. Compare from the left. The first place that differs is the hundred millions: 8 and 4.
2. 827,954,642 > 472,729,735

Write <, > or = : 827,954,642 ___ 472,729,735

2. 2.34

1. ÷ 100 shifts every digit 2 places right (smaller).
2. 234 ÷ 100 = 2.34

234 ÷ 100 = ___

3. 0.649

1. $\frac{649}{1000}$ is 649 1000ths.
2. 1000ths take 3 places after the point: $\frac{649}{1000}$ = 0.649

Write $\frac{649}{1000}$ as a decimal.

4. 8.14

1. Look at the digit just right of the hundredth place: 2.
2. Less than 5, so round down: 8.142 → 8.14

Round 8.142 to the nearest hundredth.

5. $1.70. 2 pounds cost $1.70.

1. Work in cents: 85 × 2 = 170
2. 170 cents = $1.70

A pound of nails costs $0.85. How much do 2 pounds cost?

6. 50 R 45

1. How many 76s in 384? 5. 76 × 5 = 380. 384 − 380 = 4. Bring down the 5.
2. How many 76s in 45? 0. 76 × 0 = 0. 45 − 0 = 45.
3. Check: 76 × 50 + 45 = 3,845

3,845 ÷ 76 = ___

7. 8

1. 65 ÷ 8: 8 × 8 = 64, and 65 − 64 = 1. So 65 ÷ 8 is 8 R 1.
2. The 1 leftover eggs are not enough for another cake, so the answer is 8.

A baker has 65 eggs. Each cake takes 8 eggs. How many whole cakes can she bake?

8. 61

1. Parentheses: 6 + 3 = 9
2. Multiply: 8 × 9 = 72
3. Subtract: 72 − 11 = 61

Use the order of operations: 8 × (6 + 3) − 11

9. $\frac{7}{8} > \frac{1}{3}$

1. Use the common denominator 24: $\frac{7}{8} = \frac{21}{24}$ and $\frac{1}{3} = \frac{8}{24}$.
2. $\frac{7}{8} > \frac{1}{3}$

Write < or > : $\frac{7}{8}$ ___ $\frac{1}{3}$

10. 1 cup. She used 1 cup of flour.

1. Unknown: the total.
2. $\frac{1}{3} + \frac{2}{3} = \frac{3}{3} = 1$
3. Answer: She used 1 cup of flour.

A cook used $\frac{1}{3}$ cup of flour for bread and $\frac{2}{3}$ cup for biscuits. How much flour did she use?

11. $\frac{1}{3}$ gallon. $\frac{1}{3}$ gallon is left.

1. Unknown: how much is left.
2. $\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$
3. Answer: $\frac{1}{3}$ gallon is left.

A jug held $\frac{2}{3}$ gallon of milk. The family drank $\frac{1}{3}$ gallon. How much milk is left?

12. $\frac{5}{6}$

1. Common denominator 6: $\frac{1}{3} = \frac{2}{6}$ and $\frac{1}{2} = \frac{3}{6}$.
2. $\frac{2}{6}$ is less than $\frac{3}{6}$, so regroup 1 whole as $\frac{6}{6}$: 2 and $\frac{2}{6}$ becomes 1 and $\frac{8}{6}$.
3. Whole numbers: 1 − 1 = 0
4. Fractions: $\frac{8}{6} - \frac{3}{6} = \frac{5}{6}$

$2\frac{1}{3} - 1\frac{1}{2}$ = ___

13. 4 baskets. 4 baskets held bread.

1. Unknown: the part.
2. Bar model: 6 split into 3 equal parts; take 2 of them.
3. One part: 6 ÷ 3 = 2
4. 2 parts: 2 × 2 = 4
5. Answer: 4 baskets held bread.

Jesus fed the crowd, and the disciples gathered 6 baskets of pieces. If $\frac{2}{3}$ of the baskets held bread and the rest fish, how many baskets held bread?

14. $\frac{3}{4}$

1. Change to an improper fraction: $1\frac{1}{2} = \frac{3}{2}$
2. Multiply tops and bottoms: $\frac{3 \times 1}{2 \times 2} = \frac{3}{4}$

$1\frac{1}{2} \times \frac{1}{2}$ = ___

15. $2\frac{1}{2}$ square feet

1. Area = length × width
2. $\frac{3}{2} \times \frac{5}{3} = \frac{15}{6} = 2\frac{1}{2}$

Find the area of a rectangle $1\frac{1}{2}$ ft long and $1\frac{2}{3}$ ft wide.

16. $\frac{1}{9}$

1. Split one third into 3 equal parts.
2. 3 × 3 = 9, so each part is $\frac{1}{9}$ of the whole.
3. Check: $\frac{1}{9} \times 3 = \frac{3}{9} = \frac{1}{3}$

$\frac{1}{3} \div 3$ = ___

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

End-of-Year Exam

School Launch · Grade 5 Math · Units 1–8 · Worksheet A

No calculator

Name _____ Date _____ Score _____ / 24

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, draw a bar model if it helps, write the equation, solve, and answer in a sentence with units.

1. Write <, > or = : 281,565,538 ___ 204,600,629 HARD

2. 633 ÷ 100 = ___ HARD

3. Write $\frac{784}{1000}$ as a decimal. HARD

4. Round 79.949 to the nearest hundredth. HARD

5. A pound of nails costs $1.81. How much do 8 pounds cost? HARD

6. 7,514 ÷ 85 = ___ HARD

7. 19 apples are shared equally into 4 baskets. How many apples are left over? HARD

8. Use the order of operations: 11 × (8 + 2) − 2 HARD

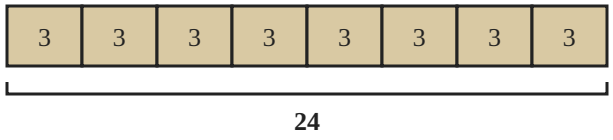
9. Write < or > : $\frac{2}{5}$ ___ $\frac{5}{8}$ HARD

10. A carpenter planed $\frac{1}{6}$ inch off one board and $\frac{1}{3}$ inch off another. How much did he plane off in all? HARD

11. A jug held $\frac{7}{10}$ gallon of milk. The family drank $\frac{3}{10}$ gallon. How much milk is left? HARD

12. $3\frac{3}{4} - 1\frac{7}{8}$ = ___ HARD

13. A baker made 24 rolls and sold $\frac{7}{8}$ of them by noon. How many rolls did she sell? HARD



14. $3\frac{1}{2} \times \frac{1}{2}$ = ___ HARD

15. Find the area of a rectangle $2\frac{1}{2}$ ft long and $1\frac{1}{3}$ ft wide. HARD

16. 2 ÷ $\frac{1}{2}$ = ___ HARD

17. A farmer drives 5 miles to the mill and 8.2 miles to town. How far does he drive? HARD

18. A yard of cloth costs $7.74. How much do 8 yards cost? HARD

19. 4.3 ÷ 2 = ___ HARD

20. 3.54 ÷ 0.6 = ___ HARD

21. 5 feet 3 inches = ___ inches HARD

22. The formula for the area of a rectangle is A = l × w. Find A when l = 4 ft and w = 7 ft. HARD

23. A net is made of 6 rectangles. What solid does it fold into? (cube, rectangular prism, triangular prism, square pyramid, triangular pyramid) HARD

24. A shed is made of two box shapes: 9 ft × 4 ft × 9 ft and 4 ft × 2 ft × 2 ft. What is its total volume? HARD

Answer Key · End-of-Year Exam

School Launch · Grade 5 Math · Units 1–8 · Worksheet A · for the parent

Key

1. 281,565,538 > 204,600,629

1. Compare from the left. The first place that differs is the ten millions: 8 and 0.
2. 281,565,538 > 204,600,629

Write <, > or = : 281,565,538 ___ 204,600,629

2. 6.33

1. ÷ 100 shifts every digit 2 places right (smaller).
2. 633 ÷ 100 = 6.33

633 ÷ 100 = ___

3. 0.784

1. $\frac{784}{1000}$ is 784 1000ths.
2. 1000ths take 3 places after the point: $\frac{784}{1000}$ = 0.784

Write $\frac{784}{1000}$ as a decimal.

4. 79.95

1. Look at the digit just right of the hundredth place: 9.
2. 5 or more, so round up: 79.949 → 79.95

Round 79.949 to the nearest hundredth.

5. $14.48. 8 pounds cost $14.48.

1. Work in cents: 181 × 8 = 1448
2. 1448 cents = $14.48

A pound of nails costs $1.81. How much do 8 pounds cost?

6. 88 R 34

1. How many 85s in 751? 8. 85 × 8 = 680. 751 − 680 = 71. Bring down the 4.
2. How many 85s in 714? 8. 85 × 8 = 680. 714 − 680 = 34.
3. Check: 85 × 88 + 34 = 7,514

7,514 ÷ 85 = ___

7. 3

1. 19 ÷ 4: 4 × 4 = 16, and 19 − 16 = 3. So 19 ÷ 4 is 4 R 3.
2. The question asks for what is left over, which is the remainder: 3.

19 apples are shared equally into 4 baskets. How many apples are left over?

8. 108

1. Parentheses: 8 + 2 = 10
2. Multiply: 11 × 10 = 110
3. Subtract: 110 − 2 = 108

Use the order of operations: 11 × (8 + 2) − 2

9. $\frac{2}{5} < \frac{5}{8}$

1. Use the common denominator 40: $\frac{2}{5} = \frac{16}{40}$ and $\frac{5}{8} = \frac{25}{40}$.
2. $\frac{2}{5} < \frac{5}{8}$

Write < or > : $\frac{2}{5}$ ___ $\frac{5}{8}$

10. $\frac{1}{2}$ inch. He planed off $\frac{1}{2}$ inch in all.

1. Unknown: the total.
2. Common denominator 6: $\frac{1}{6} = \frac{1}{6}$, $\frac{1}{3} = \frac{2}{6}$
3. $\frac{1}{6} + \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$
4. Answer: He planed off $\frac{1}{2}$ inch in all.

A carpenter planed $\frac{1}{6}$ inch off one board and $\frac{1}{3}$ inch off another. How much did he plane off in all?

11. $\frac{2}{5}$ gallon. $\frac{2}{5}$ gallon is left.

1. Unknown: how much is left.
2. $\frac{7}{10} - \frac{3}{10} = \frac{4}{10} = \frac{2}{5}$
3. Answer: $\frac{2}{5}$ gallon is left.

A jug held $\frac{7}{10}$ gallon of milk. The family drank $\frac{3}{10}$ gallon. How much milk is left?

12. $1\frac{7}{8}$

1. Common denominator 8: $\frac{3}{4} = \frac{6}{8}$ and $\frac{7}{8} = \frac{7}{8}$.
2. $\frac{6}{8}$ is less than $\frac{7}{8}$, so regroup 1 whole as $\frac{8}{8}$: 3 and $\frac{6}{8}$ becomes 2 and $\frac{14}{8}$.
3. Whole numbers: 2 − 1 = 1
4. Fractions: $\frac{14}{8} - \frac{7}{8} = \frac{7}{8}$

$3\frac{3}{4} - 1\frac{7}{8}$ = ___

13. 21 rolls. She sold 21 rolls.

1. Unknown: the part.
2. Bar model: 24 split into 8 equal parts; take 7 of them.
3. One part: 24 ÷ 8 = 3
4. 7 parts: 3 × 7 = 21
5. Answer: She sold 21 rolls.

A baker made 24 rolls and sold $\frac{7}{8}$ of them by noon. How many rolls did she sell?

14. $1\frac{3}{4}$

1. Change to an improper fraction: $3\frac{1}{2} = \frac{7}{2}$
2. Multiply tops and bottoms: $\frac{7\times1}{2\times2} = \frac{7}{4}$
3. Simplify: $\frac{7}{4} = 1\frac{3}{4}$

$3\frac{1}{2} \times \frac{1}{2}$ = ___

15. $3\frac{1}{3}$ square feet

1. Area = length × width
2. $\frac{5}{2} \times \frac{4}{3} = \frac{20}{6} = 3\frac{1}{3}$

Find the area of a rectangle $2\frac{1}{2}$ ft long and $1\frac{1}{3}$ ft wide.

Every answer was recomputed by an independent checker from the problem data, and every equation in the steps was evaluated.

16. 4

1. Each whole holds 2 halves.
2. $2 \times 2 = 4$
3. Check: $4 \times \frac{1}{2} = 2$

$2 \div \frac{1}{2} = ___$

---

17. 13.2 miles. He drives 13.2 miles.

1. Line up the points: 5.0 + 8.2 = 13.2

A farmer drives 5 miles to the mill and 8.2 miles to town. How far does he drive?

---

18. $61.92. 8 yards cost $61.92.

1. 774 × 8 = 6192 cents
2. = $61.92

A yard of cloth costs $7.74. How much do 8 yards cost?

---

19. 2.15

1. Divide as with whole numbers and put the point straight above: 4.3 ÷ 2 = 2.15
2. Check: 2.15 × 2 = 4.3

4.3 ÷ 2 = ___

---

20. 5.9

1. Move both points one place right: 3.54 ÷ 0.6 becomes 35.4 ÷ 6
2. 35.4 ÷ 6 = 5.9
3. Check: 5.9 × 0.6 = 3.54

3.54 ÷ 0.6 = ___

---

21. 63

1. 1 foot = 12 inches: 5 × 12 = 60
2. 60 + 3 = 63

5 feet 3 inches = ___ inches

---

22. 28 square feet

1. Put the numbers in place of the letters.
2. A = 4 × 7
3. 4 × 7 = 28

The formula for the area of a rectangle is A = l × w. Find A when l = 4 ft and w = 7 ft.

---

23. rectangular prism

1. Count the faces: 6.
2. Look at their shapes: 6 rectangles.
3. That is a rectangular prism.

A net is made of 6 rectangles. What solid does it fold into? (cube, rectangular prism, triangular prism, square pyramid, triangular pyramid)

---

24. 340 cubic feet

1. 9 × 4 × 9 = 324
2. 4 × 2 × 2 = 16
3. 324 + 16 = 340

A shed is made of two box shapes: 9 ft × 4 ft × 9 ft and 4 ft × 2 ft × 2 ft. What is its total volume?
