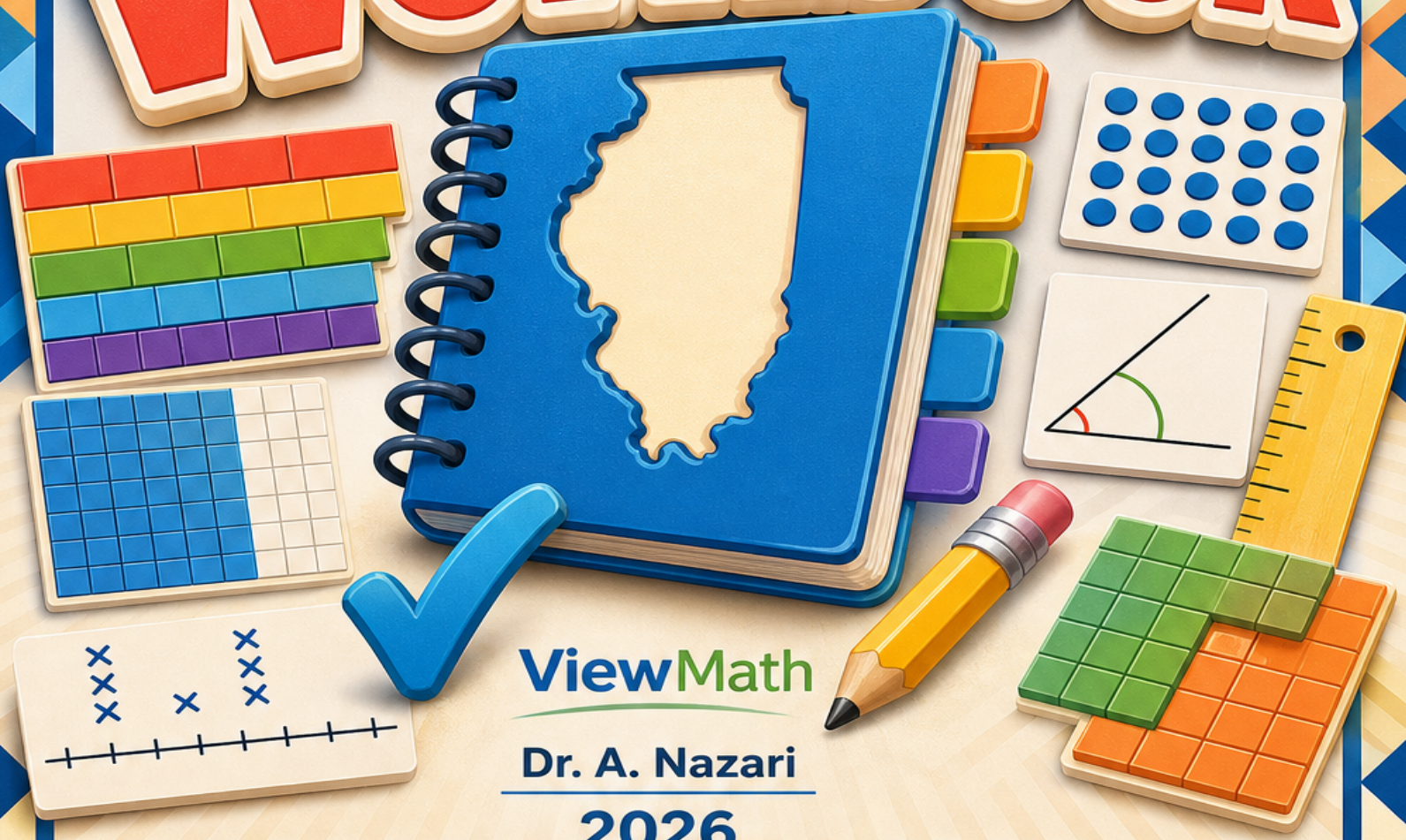


# Illinois

Grade 4

Math Summer

# Workbook



ViewMath

Dr. A. Nazari

2026

# Illinois IAR Grade 4 Math Summer Workbook

*Practice Pages, Quick Reviews & Weekly Mixed Reviews*

**Dr. A. Nazari**

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## SUMMER PRACTICE

# Grade 4 Math Summer Workbook

### **Quick Review, Workbook Practice, Weekly Reviews, and Answers**

*This workbook keeps Grade 4 math fresh with short review lessons and plenty of practice. Each week builds from focused skills to a mixed Friday review, so students can remember, practice, and check their thinking.*

- ✓ Read the Quick Review.
- ✎ Work through the practice problems.
- ✓ Use Friday for mixed review.
- 💡 Study the answer explanations after trying first.

***A little math each week keeps skills strong.***



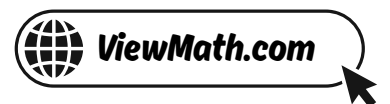
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# **How to Use This Workbook**

*Use one short lesson at a time, then check and learn from mistakes.*

## **The Weekly Routine**

**Monday-Thursday** *Read the Quick Review, then complete the workbook practice for one topic.*

**Friday** *Complete the weekly mixed review to bring the week's skills together.*

**After practice** *Check answers and read the explanations for any problem that felt tricky.*

### **For students**

*Try the problems before looking at the answer key. If you miss a problem, read the explanation, fix your work, and mark it as a problem to try again later.*

### **For parents and teachers**

*The workbook pages are designed for steady practice. Use the Quick Review for a short reteach, and use the answer explanations as the teaching step after a mistake.*

### **Best practice habit**

*Show your thinking. Grade 4 math gets easier when you write the operation, draw a quick model, label units, or explain how you know.*

### **Goal**

*By the end of 8 weeks, students will have reviewed the major Grade 4 skills with workbook-style practice and mixed weekly review.*

# What's Inside?

An 8-week workbook plan for Grade 4 summer math practice.

## **Week 1**

*Multiplicative comparisons, comparison stories, multi-step problems, factors, multiples, primes, composites.*

## **Week 2**

*Patterns, input-output rules, place value to one million, ten-times relationships, rounding.*

## **Week 3**

*Multi-digit addition, subtraction, multiplication, division, estimation, interpreting remainders.*

## **Week 4**

*Equivalent fractions, comparing fractions, decomposing fractions, adding and subtracting like denominators.*

## **Week 5**

*Mixed numbers, fraction multiplication, tenths, hundredths, decimals, and decimal comparisons.*

## **Week 6**

*Metric and customary conversions, measurement word problems, area, perimeter, line plots with fractions.*

## **Week 7**

*Angles, angle measurement, angle addition, lines, rays, segments, parallel and perpendicular lines.*

## **Week 8**

*Shape classification, symmetry, solid figures, money choices, and final Grade 4 mixed review.*

### **Quick Reviews**

*Each topic begins with a compact review of the skill students need before starting the practice.*

### **Workbook Practice**

*Practice sets include computation, word problems, tables, graphs, models, and short written reasoning.*

 **Weekly Reviews**

Friday pages mix the week's skills so students can practice choosing the right method.

 **Answers**

The answer key includes explanations that show how to think through the problem, not just the final answer.

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# My Summer Workbook Progress

Check off each lesson and write your Friday review score.

**This workbook belongs to:** \_\_\_\_\_

Week	Mon	Tue	Wed	Thu	Friday Review
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ / ____
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ / ____
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ / ____
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ / ____
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ / ____
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ / ____
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ / ____
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	____ / ____

## Reflection

One skill I improved this week: \_\_\_\_\_

One skill I want to practice again: \_\_\_\_\_

**Keep going. Finished pages are proof of progress.**



# ★ *Table of Contents* ★

*Your 8-week summer workbook plan*

★ <b>Week 1</b>	<b><i>Operations and Number Relationships</i></b> .....	<b>1</b>
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***A little review each day keeps math fresh!***



# WEEK

# 1

## Operations and Number Relationships

### This Week's Days

*Day 1: Multiplication as a Comparison*

*Day 4: Factors, Multiples, and Primes*

*Day 5: Week 1 Mixed Review*



## Day 1 Multiplication as a Comparison

### SKILL SNAPSHOT

A **multiplicative comparison** tells how many times as large one amount is as another amount. The words “times as many” or “times as much” point to equal groups.

- ✓ “35 is 5 times as many as 7” means  $5 \times 7 = 35$ .
- ✓ Use **large amount = factor**  $\times$  **small amount** when the smaller amount is known.
- ✓ Divide when the larger amount and the comparison factor are known.
- ✓ “Times as many” means multiply or divide; “more than” means add or subtract.



**Remember:** Ask: Do I know the smaller amount or the larger amount? That tells you whether to multiply or divide.

### Find the larger amount.

- 1 4 times as many as 8 is \_\_\_\_\_.
- 2 7 times as many as 6 is \_\_\_\_\_.
- 3 A small crate has 9 oranges. A large crate has 5 times as many oranges. How many

oranges are in the large crate?

- 4 Use the model. How many counters are in the large group? \_\_\_\_\_



### Find the missing smaller amount.

- 5 63 is 7 times as many as \_\_\_\_\_.
- 6 48 is 6 times as many as \_\_\_\_\_.
- 7 A banner is 36 feet long. It is 4 times as long as a sign. How long is the sign?

- 8 Use the bar model. What number belongs in each small box? \_\_\_\_\_



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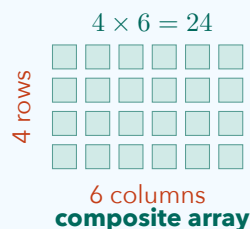


## Day 4 Factors, Multiples, and Primes

### SKILL SNAPSHOT

Factors, multiples, prime numbers, and composite numbers describe how whole numbers are built.

- ✓ A **factor** divides a number with no remainder.
- ✓ A **factor pair** has two numbers that multiply to make a product.
- ✓ A **multiple** is a number you say when skip-counting by a factor.
- ✓ A **prime number** has exactly two factors: 1 and itself.
- ✓ A **composite number** has more than two factors.
- ✓ The number 1 is neither prime nor composite.



**Remember:** To list factors, test numbers in order and stop when factor pairs repeat.

### Factors and factor pairs.

- 1 List all factors of 18.  
\_\_\_\_\_
- 2 Find all factor pairs of 28.  
\_\_\_\_\_
- 3 Is 7 a factor of 56? Explain with a multiplication fact.  
\_\_\_\_\_
- 4 Use the array. What factor pair for 30 is shown? \_\_\_\_\_



### Multiples.

- 5 List the first five nonzero multiples of 9.  
\_\_\_\_\_
- 6 Is 42 a multiple of 6? \_\_\_\_\_
- 7 Complete the table.
- 8 I am greater than 20 and less than 30. I am a multiple of both 4 and 6. What number am I?

Number	$1 \times$	$2 \times$	$3 \times$	$4 \times$
8	8	16	_____	_____



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**☰ Prime or composite.**

9 Is 31 prime or composite?

\_\_\_\_\_

False

10 Is 21 prime or composite?

\_\_\_\_\_

12 Which number is composite?

A. 2

B. 17

C. 29

D. 33

11 True or False: 1 is prime.

True

**☰ Use factors and multiples to reason.**

13 A teacher has 36 cards. Can she make equal groups of 4 cards with none left over?

14 Which list shows only multiples of 5?

A. 5, 10, 14, 20

B. 10, 15, 20, 25

C. 3, 5, 10, 15

D. 5, 11, 15, 20

15 A rectangle has an area of 32 square units and whole-number side lengths. Give one possible factor pair for the side lengths. \_\_\_\_\_

16 Circle all prime numbers in the list: 12, 13, 15, 19, 24. \_\_\_\_\_



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**Day 5 Week 1 Mixed Review**
**WEEKLY SKILL CHECK**

This review brings together the Week 1 skills: multiplicative comparisons, comparison word problems, multi-step problems, factors, multiples, primes, and composites.

- ✓ For “times as many,” multiply when the smaller amount is known and divide when the larger amount is known.
- ✓ For “how many more,” find both amounts first, then subtract.
- ✓ Multi-step problems need a plan before the calculations begin.
- ✓ Factors multiply to make a number; multiples come from skip-counting.
- ✓ Prime numbers have exactly two factors, and composite numbers have more than two.

**Remember:** On mixed review questions, mark the comparison words or list factor pairs before choosing an answer.

**Multiplication comparisons.**

- 1 Which equation matches this sentence? 56 is 7 times as many as 8.
- A.  $7 \times 8 = 56$       B.  $56 \times 7 = 8$
- C.  $8 \div 7 = 56$       D.  $56 + 7 = 63$
- 2 9 times as many as 6 is \_\_\_\_\_.
- 3 A rope is 72 feet long. It is 8 times as long as a cord. How long is the cord?
- 4 Use the model. What is the total?
- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 7 | 7 | 7 | 7 | 7 | 7 |
|---|---|---|---|---|---|

**Comparison and multi-step problems.**

- 5 Jay has 14 points. Lena has 3 times as many points. How many more points does Lena have than Jay?
- 6 A class has 5 tables with 6 students at each table and 7 students on the carpet. How many students are there in all?
- 7 Five rows have 18 seats in each row. If 12 seats are empty, how many seats are filled?
- 8 Use the table. How many items were ordered?



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Item	Packs	Items per pack
Pencils	4	24
Erasers	3	12

**Factors, multiples, primes, and composites.**

- 9 List all factor pairs of 36.  
\_\_\_\_\_
- 10 Which statement is true about 29?
  - A. 29 is prime      B. 29 is composite
  - C. 29 has 3 as a factor      D. 29 is even
- 11 True or False: 7, 14, 21, 28 are the first four nonzero multiples of 7.  True  False
- 12 Use the array. Is 24 prime or composite?



**Mixed reasoning.**

- 13 A garden club plants 6 rows of 8 flowers and 3 rows of 5 flowers. How many flowers are planted?
- 14 Which number is a multiple of both 6 and 8?
  - A. 18      B. 24
  - C. 30      D. 42
- 15 A small box has 9 markers. A large box has 45 markers. How many times as many markers are in the large box?
- 16 A number has factor pairs (1, 40), (2, 20), (4, 10), and (5, 8). Is the number prime or composite?

**WEEK**

**8**

## *Shapes and Final Review*

 *This Week's Days* 

*Day 36: Classify Shapes*



**Day 36 Classify Shapes**

**SKILL SNAPSHOT**

Classify shapes by their attributes: number of sides, angle types, side lengths, and side relationships. A shape can belong to more than one family.



- ✓ A polygon is closed and made only of straight sides.
- ✓ Triangles have 3 sides; quadrilaterals have 4 sides.
- ✓ Pentagon = 5, hexagon = 6, octagon = 8, and decagon = 10 sides.
- ✓ A square is also a rectangle, rhombus, parallelogram, and quadrilateral.

**Remember:** Use the most specific name when the question asks for one, but remember all true shape families still apply.

**Name polygons by sides.**

- 1 How many sides does a hexagon have? \_\_\_\_\_
- 2 A polygon has 5 sides. What is it called? \_\_\_\_\_
- 3 Use the table. Which polygon has 8 sides?

Polygon	Sides
Hexagon	6
Octagon	8
Decagon	10

- 4 Is a circle a polygon? \_\_\_\_\_

**Classify quadrilaterals.**

- 5 A shape has 4 equal sides and 4 right angles. What is it? \_\_\_\_\_  True  False
- 6 True or False: Every rectangle is a parallelogram.  True  False
- 7 True or False: Every parallelogram is a rectangle.  True  False
- 8 Use the diagram. Name the most specific shape. \_\_\_\_\_





## ANSWER KEY

# Answer Key & Explanations

---

Use the answers to check your work, then read the explanations to learn the method.

### ✔ **How to review**

*First compare your final answer. If it does not match, read the explanation slowly and redo the problem beside it. The goal is to understand the move that gets you from the question to the final answer.*

### 📅 Week 1 Day 1: Multiplication as a Comparison

#### ✓ Answers

1

32

2

42

3

45 oranges

4

24 counters

5

9

6

8

7

9 feet

8

8

9

 $8 \times 9 = 72$ 

10

66 is 6 times as many as 11.

11

B

12

56

13

36 stickers

14

 $6 \times 15 = 90$ ; 90 marbles

15

False

16

80 plants

#### 💡 Explanations

1

The phrase "4 times as many" means 4 equal groups of 8. Multiply  $4 \times 8 = 32$ , so the larger amount is 32.

2

Use multiplication because the smaller amount is known. Seven groups of 6 equals  $7 \times 6 = 42$ .

3

The large crate has 5 equal groups of the small crate amount. Multiply  $5 \times 9 = 45$ , so it has 45 oranges.

4

The model shows 4 equal groups, and each group is 6. Multiply  $4 \times 6 = 24$  counters.

5

The larger amount is known, so divide by the comparison factor. Since  $63 \div 7 = 9$ , the smaller amount is 9.

6

Use division to undo the multiplication comparison.  $48 \div 6 = 8$ , so 48 is 6 times as many as 8.

7

The banner is the larger amount in the comparison. Divide  $36 \div 4 = 9$ , so the sign is 9 feet long.

8

The total 40 is split into 5 equal parts. Divide  $40 \div 5 = 8$ , so each small box is 8.

9

The comparison factor is 8 and the smaller amount is 9. Multiplying them gives the larger amount, so the equation is  $8 \times 9 = 72$ .

10

A multiplication equation can be read as a comparison by making the product the larger amount. Since  $6 \times 11 = 66$ , one correct sentence is "66 is 6 times as many as 11."



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- 11 The words "5 times as many as 9" mean 5 equal groups of 9. That is shown by  $5 \times 9 = 45$ , choice B.
- 12 Use the comparison pattern: large amount equals factor times small amount. Multiply  $8 \times 7 = 56$ .
- 13 Jonah's amount is larger because it is 3 times Ella's amount. Multiply  $3 \times 12 = 36$  stickers.
- 14 The jar has 6 groups of the small bag amount. Multiplying  $6 \times 15$  gives 90 marbles.
- 15 "More than" describes an additive comparison, so it uses addition or subtraction. "Times as many" describes equal groups, so it uses multiplication or division.
- 16 The whole garden is 8 equal rows of 10 plants. Multiply  $8 \times 10 = 80$ , so the garden has 80 plants.

 **Week 1 Day 4: Factors, Multiples, and Primes**

 **Answers**

- 1 1, 2, 3, 6, 9, 18
- 2 (1, 28), (2, 14), (4, 7)
- 3 Yes;  $7 \times 8 = 56$ .
- 4  $5 \times 6$
- 5 9, 18, 27, 36, 45
- 6 Yes
- 7 24; 32
- 8 24
- 9 Prime
- 10 Composite
- 11 False
- 12 D
- 13 Yes
- 14 B
- 15 4 and 8
- 16 13 and 19

 **Explanations**

- 1 Factor pairs for 18 are  $1 \times 18$ ,  $2 \times 9$ , and  $3 \times 6$ . Listing every number in those pairs gives all the factors.
- 2 A factor pair multiplies to the target number. The products  $1 \times 28$ ,  $2 \times 14$ , and  $4 \times 7$  make 28.
- 3 A number is a factor if it divides the target evenly. Since  $7 \times 8 = 56$ , 7 is a factor of 56.
- 4 The array has 5 rows and 6 columns. That shows the factor pair 5 and 6 because  $5 \times 6 = 30$ .



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- 5 Multiples of 9 come from skip-counting by 9. The first five nonzero multiples are  $9 \times 1$  through  $9 \times 5$ .
- 6 A multiple of 6 is a product of 6 and a whole number. Since  $6 \times 7 = 42$ , 42 is a multiple of 6.
- 7 Multiply 8 by each whole number in the headings.  $8 \times 3 = 24$  and  $8 \times 4 = 32$ .
- 8 A common multiple appears in both skip-counting lists. Between 20 and 30, 24 is a multiple of 4 and 6.
- 9 A prime number has exactly two factors, 1 and itself. The number 31 is not divisible evenly by 2, 3, 4, or 5, so it is prime.
- 10 The number 21 has more than two factors. Since  $3 \times 7 = 21$ , its factors include 1, 3, 7, and 21.
- 11 A prime number must have exactly two factors. The number 1 has only one factor, so it is neither prime nor composite.
- 12 A composite number has more than two factors. 33 is composite because  $3 \times 11 = 33$ .
- 13 Equal groups of 4 are possible if 4 is a factor of 36. Since  $4 \times 9 = 36$ , there will be no cards left over.
- 14 Multiples of 5 end in 0 or 5 when skip-counting by 5. The list 10, 15, 20, 25 contains only multiples of 5.
- 15 The side lengths must multiply to 32. One possible factor pair is 4 and 8 because  $4 \times 8 = 32$ .
- 16 Prime numbers have exactly two factors. In the list, 13 and 19 are prime; the other numbers have additional factor pairs.



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 **Week 1 Day 5: Week 1 Mixed Review**
 **Answers**

1 A

2 54

3 9 feet

4 42

5 28 more points

6 37 students

7 78 seats

8 132 items

9 (1, 36), (2, 18), (3, 12), (4, 9), (6, 6)

10 A

11 True

12 Composite

13 63 flowers

14 B

15 5 times as many

16 Composite

 **Explanations**

1 The words "7 times as many as 8" mean 7 groups of 8. Multiplying  $7 \times 8$  gives 56, so choice A matches.

2 A "times as many" comparison uses multiplication when the smaller amount is known. Compute  $9 \times 6 = 54$ .

3 The rope is the larger amount and the factor is 8. Divide  $72 \div 8 = 9$ , so the cord is 9 feet long.

4 The model shows 6 equal groups with 7 in each group. Equal groups are multiplication, so  $6 \times 7 = 42$ .

5 First find Lena's points:  $3 \times 14 = 42$ . Then subtract Jay's points,  $42 - 14 = 28$  more points.

6 First multiply to count students at tables:  $5 \times 6 = 30$ . Then add the 7 students on the carpet to get 37.

7 First find the total seats:  $5 \times 18 = 90$ . Then subtract the empty seats,  $90 - 12 = 78$  filled seats.

8 Find each total first:  $4 \times 24 = 96$  pencils and  $3 \times 12 = 36$  erasers. Add  $96 + 36 = 132$  items.

9 Factor pairs multiply to make 36. Testing numbers in order gives these pairs before the pairs repeat.

10 A prime number has exactly two factors. The number 29 is not divisible evenly by 2, 3, 4, or 5, so its only factors are 1 and 29.



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- 11 Multiples of 7 come from skip-counting by 7. These are  $7 \times 1$ ,  $7 \times 2$ ,  $7 \times 3$ , and  $7 \times 4$ .
- 12 The array shows 4 rows and 6 columns, so  $4 \times 6 = 24$ . Because 24 has factors besides 1 and itself, it is composite.
- 13 Find each part first:  $6 \times 8 = 48$  flowers and  $3 \times 5 = 15$  flowers. Add  $48 + 15 = 63$  flowers.
- 14 A common multiple appears in both skip-counting lists. 24 is a multiple of 6 and 8 because  $6 \times 4 = 24$  and  $8 \times 3 = 24$ .
- 15 Compare by dividing the larger amount by the smaller amount. Since  $45 \div 9 = 5$ , the large box has 5 times as many markers.
- 16 A prime number has only two factors, 1 and itself. This number has several factor pairs, so it has more than two factors and is composite.

### 📅 Week 8 Day 36: Classify Shapes

#### ✓ Answers

- 1 6 sides    2 Pentagon    3 Octagon    4 No    5 Square    6 True    7 False
- 8 Rhombus    9 Acute triangle    10 Right triangle    11 Obtuse triangle    12 C    13 B
- 14 Rhombus    15 Rectangle    16 True

#### 💡 Explanations

- 1 Polygon names can tell the number of sides. The prefix hex- means 6, so a hexagon has 6 sides.
- 2 A pentagon is a polygon with 5 straight sides. The prefix pent- helps you remember 5.
- 3 The table lists the number of sides for each polygon. The row with 8 sides is octagon.
- 4 A polygon must be closed and made only of straight sides. A circle is curved, so it is not a polygon.



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- 5 A square has all sides equal and all angles right. It is the most specific name for this shape.
- 6 A parallelogram has two pairs of parallel sides. Rectangles have two pairs of parallel sides, so every rectangle is a parallelogram.
- 7 A rectangle must have four right angles. A parallelogram can have slanted angles, so not every parallelogram is a rectangle.
- 8 The shape has four equal sides but does not show right angles. A quadrilateral with four equal sides is a rhombus.
- 9 A triangle is acute when all three angles are less than  $90^\circ$ . All three given angles are less than  $90^\circ$ , so the triangle is acute.
- 10 A triangle with one right angle is a right triangle. The  $90^\circ$  angle gives the classification.
- 11 A triangle is obtuse if one angle is greater than  $90^\circ$ . Since  $120^\circ$  is greater than  $90^\circ$ , the triangle is obtuse.
- 12 An acute triangle has all angles less than  $90^\circ$ . Only choice C has three angles that are all less than  $90^\circ$ .
- 13 A rectangle is a quadrilateral with four right angles. A square has four right angles, so it is also a rectangle.
- 14 A rhombus has four equal sides and opposite sides that are parallel. It does not need right angles, so this shape is a rhombus rather than a square.
- 15 The clues describe a quadrilateral with two pairs of parallel sides and four right angles. A rectangle fits all three clues.
- 16 Shapes can belong to several families at once. For example, a square is a quadrilateral, parallelogram, rectangle, and rhombus.



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