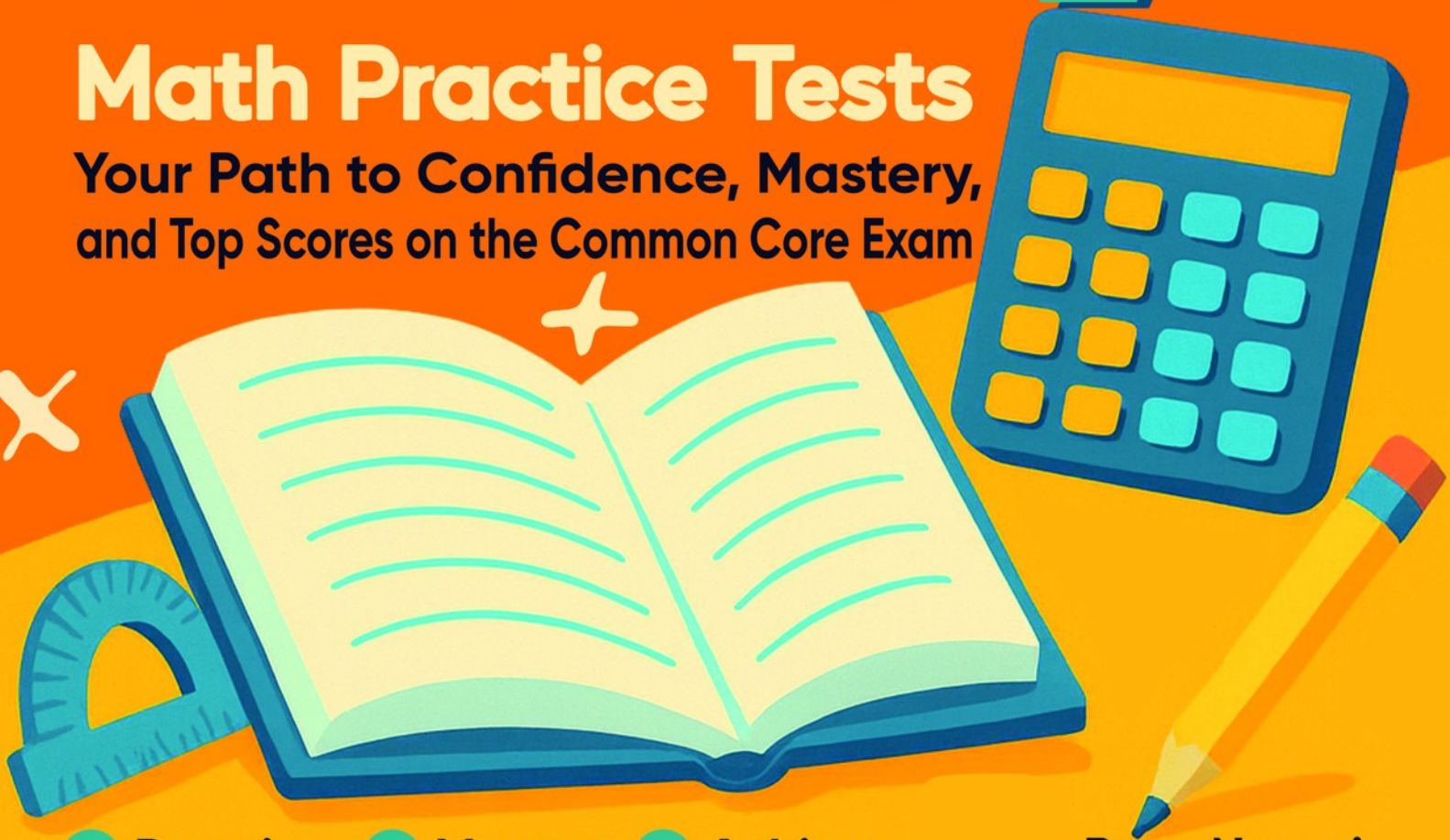
7 Full-Length Common Core Grade 7 Math Practice Tests

Your Path to Confidence, Mastery, and Top Scores on the Common Core Exam



Practice Master Achieve

Reza Nazari

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GRADE 7 MATH

Your Ultimate Quick Reference Guide

Master the Basics! | Ace Your Tests! | Build Confidence! | Succeed in Math!

NUMBER OPERATIONS & INTEGERS

INTEGER RULES

Adding:

- **Same signs: add, keep sign.** $(-5)+(-3)=-8$
- **Different signs: subtract, sign of larger.** $(-8)+(5)=-3$

Mult./Divide:

- **Same signs → positive.** $(-4)(-3)=12$
- **Different signs → negative.** $(6)(-2)=-12$

FRACTION OPERATIONS

Add/Subtract: Common denominator first.

Ex:

$1/4+1/6=3/12+2/12=5/12$

Multiply: Top×top, bottom×bottom.

Ex: $2/3\times 5/7=10/21$

Divide: Flip the second, then multiply.

Ex:

$3/4\div 2/5=3/4\times 5/2=15/8$

Keep–Change–Flip for division!

▷ RATIOS, RATES & PERCENTS

RATIOS

Compares two quantities.

Notation: $3:5$ **or** $\frac{3}{5}$

Ex: **3 cats to 5 dogs ⇒ ratio** $3:5$

UNIT RATE

Amount per 1 unit.

Ex: **$4 per gallon**

Find it: Total ÷ number.

Ex: $\$12\div 3=\$4$ **per item**

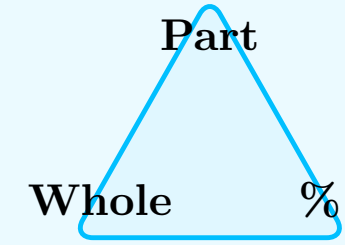
PROPORTIONS

Cross multiply:

$\frac{2}{3}=\frac{x}{9}$

$3x=18\Rightarrow x=6$

% PERCENT MAGIC TRIANGLE (Cover what you're finding)



Cover the one you want to find!

- **Part** = %× **Whole.** ***Ex:*** $0.25 \times 80 = 20$
- **%** = **Part** ÷ **Whole.** ***Ex:*** $20 \div 80 = 25\%$
- **Whole** = **Part** ÷ **%.** ***Ex:*** $20 \div 0.25 = 80$

$\sqrt{x}$ ALGEBRA ESSENTIALS

PEMDAS

Order of Operations

- **P** Parentheses
- **E** Exponents
- **M** Multiply
- **D** Divide
- **A** Add
- **S** Subtract

Combining Like Terms

Only add/subtract terms with same variable:

$3x + 5x = 8x$ ✓

$3x + 5y$ (can't combine)

Solving Equations

Isolate variable using inverse operations:

$2x + 3 = 11$

$2x = 8$ (subtract 3)

$x = 4$ (divide by 2)

Distributive Property

$a(b + c) = ab + ac$

Ex: $3(x + 4) = 3x + 12$

△ GEOMETRY ESSENTIALS

RECTANGLE



$A = l \times w$

TRIANGLE



$A = \frac{1}{2}bh$

CIRCLE



$A = \pi r^2$

Perimeter: Add all sides | **Circumference:** $C = 2\pi r$ or $C = \pi d$

3D SHAPES - VOLUME & SURFACE AREA

RECT. PRISM



$V = l \times w \times h$

TRI. PRISM



$V = \text{Base} \times l$

CUBE



$V = s^3$

▾ **Remember: Volume = cubic units (units^3), Area = square units (units^2)**

♣ DATA ANALYSIS & PROBABILITY

STATISTICS CENTRAL

⋆ **MEAN**: Add all ÷ count. Ex: $\{5, 7, 8, 10\} \to 7.5$

⋆ **MEDIAN**: Order, find middle. Ex: $\{3, 5, 7, 9, 11\} \to 7$

⋆ **MODE**: Most frequent. Ex: $\{2, 5, 5, 7, 9\} \to 5$

⋆ **RANGE**: Max − Min. Ex: $\{3, 7, 9, 12\} \to 9$

PROBABILITY

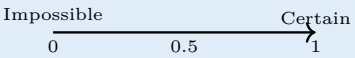
Formula:

$$P = \frac{\text{Favorable}}{\text{Total}}$$

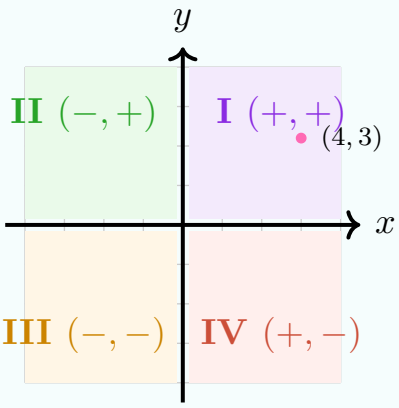
Rolling a die:

$$\text{P}(4) = \frac{1}{6}$$

$$\text{P}(\text{even}) = \frac{3}{6} = \frac{1}{2}$$



⊙ COORDINATE PLANE NAVIGATOR



▷ **How to plot (x, y):**
Start at $(0, 0)$ → move x left/right → move y up/down.

★ **Distance:**
Horizontal = subtract x's. Vertical = subtract y's.
Ex: $(2, 5)$ to $(7, 5)$ → dist = 5.

• **Remember:** x = horizontal (left/right), y = vertical (up/down).



Use slope
Rise over run

Scan Me

9) On the school campus map, 1 inch represents 5 feet. The distance between the gym and the cafeteria on the map is 9.2 inches. What is the actual distance between them in feet?

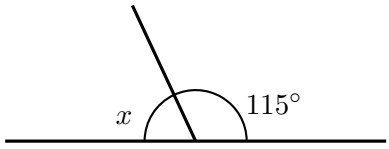
☐ A. 42 *ft*
☐ B. 45 *ft*
☐ C. 46 *ft*
☐ D. 48 *ft*

10) Evaluate: $3^2 - 2(4 - 7) + 5$. Write your answer as an integer.

11) A store sells pens for \$2 each and notebooks for \$4 each. Kara buys 5 pens and 3 notebooks. What is her total cost?

☐ A. \$18
☐ B. \$20
☐ C. \$22
☐ D. \$26

12) Angles x and 115° form a linear pair. Find x.



☐ A. 65°
☐ B. 75°
☐ C. 85°
☐ D. 95°



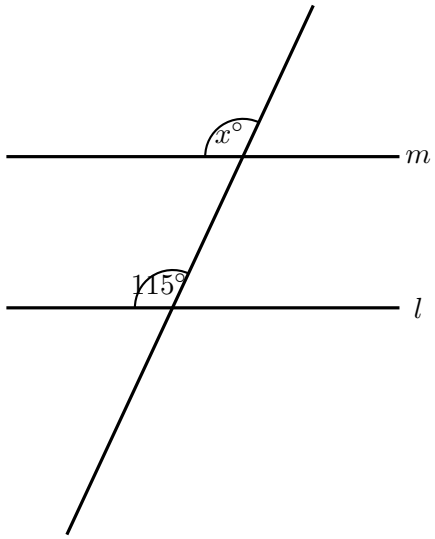
13) A store sells 3 notebooks for \$7.50. What is the unit price per notebook?

☐ A. \$2.25
☐ B. \$2.30
☐ C. \$2.45
☐ D. \$2.50

14) Solve for y: $6y - 15 = 2y + 17$

☐ A. $y = 6$
☐ B. $y = 7$
☐ C. $y = 8$
☐ D. $y = 9$

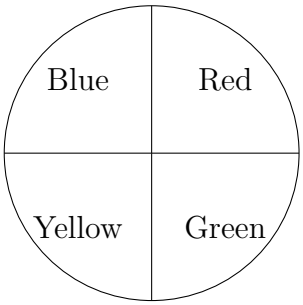
15) In the diagram, lines l and m are parallel. A transversal intersects both lines.



What is the value of x?

☐ A. 55°
☐ B. 65°
☐ C. 115°
☐ D. 125°

16) If each section of the spinner is equally likely, what is the probability of not landing on red?



☐ A. $\frac{1}{4}$
☐ B. $\frac{1}{2}$
☐ C. $\frac{3}{4}$
☐ D. 1

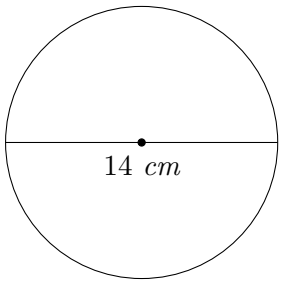
17) Which value satisfies the inequality $3x - 7 \leq 11$?

☐ A. $x = 7$
☐ B. $x = 6$
☐ C. $x = 8$
☐ D. $x = 9$

18) A digital drawing tablet is priced at \$48. It is discounted by 25%, and then an 8% sales tax is applied to the discounted price. What is the final price of the tablet?

☐ A. \$34.56
☐ B. \$38.88
☐ C. \$39.94
☐ D. \$43.20

19) A circle has a diameter of 14 *cm*. Use $\pi = 3.14$. What is the circumference?



☐ A. 22.00 *cm*
☐ B. 43.12 *cm*
☐ C. 43.96 *cm*
☐ D. 87.92 *cm*