5 Full-Length New York NYS Math Test Grade 7 Math Practice Tests

Extra Practice for Test Day Success

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5 Practice Tests

Grade 7 Math — Chart Your Path

Welcome, math explorer!

This journal holds **5 full expeditions** across the entire landscape of Grade 7 math. From the peaks of proportional reasoning to the valleys of negative numbers, every trail is mapped and waiting for you.

Trail 1–2: Scout the terrain at your own pace

Trail 3–4: Push deeper with timed conditions

Trail 5: Summit the mountain — full test simulation

Every great explorer starts with a single step.
Yours starts on the next page.

> " Five trails gives you the journey every explorer needs: discover, practice, and conquer. Pack your pencils — the expedition begins! "

🗺️ *Trail Guide* 🗺️

Your route map for 5 math expeditions

What's in This Journal

- **5 Full-Length Practice Tests** — *each trail covers all 9 domains of Grade 7 math, from ratios and proportional relationships to probability and compound events.*
- **Step-by-Step Answer Explanations** — *not just answers, but a guided walkthrough of every solution path.*
- **Expedition Log** — *chart your scores, note tricky terrain, and celebrate the trails you've conquered.*

Your 5-Trail Itinerary

Spread your trails over several weeks for the best journey:

Week 1: *Trail 1 — untimed. Explore the landscape. Mark unfamiliar territory.*

Week 2: *Study the rough terrain from Trail 1. Then attempt Trail 2 (soft timer).*

Week 3: *Trail 3 — timed (65 min). Compare with Trail 1 to see growth.*

Week 4: *Focus on weak spots. Trail 4 — timed. Practice showing all work.*

Week 5: *Trail 5 — full conditions. The summit attempt!*

⚪ Multiple Choice

Navigate four options and select the best path. Eliminate wrong answers first — like crossing streams off a map.

💡 **Explorer's tip:** *Work the problem yourself before reading the choices.*

✏️ Constructed Response

Show every calculation, label every unit, and explain your reasoning. Like a field journal, your work tells the full story.

💡 **Explorer's tip:** *Even a partial trail earns credit. Never leave it blank.*

🧭 Survival Skills 🧭

Essential navigation strategies for every trail

🧭 The Four-Point Compass

↑ N — Note the key info

Circle numbers. Underline the question.

← W — Weigh your answer

Does it match the question and estimate?

🧭

→ E — Estimate first

Get a ballpark answer before solving.

↓ S — Solve step by step

Write equations. Show every operation.

⚠️ Grade 7 Terrain Warnings

⚠️ **Negative numbers:** *Watch signs when multiplying and dividing rational numbers.*

⚠️ **Proportions:** *Make sure both ratios compare the same quantities in the same order.*

⚠️ **Percent problems:** *Identify whether you need the part, the whole, or the percent.*

⚠️ **Geometry:** *Label all measurements and don't confuse area with perimeter, or surface area with volume.*

⚠️ **Probability:** *Read whether the question asks for theoretical or experimental probability.*

Pacing Your Trek

- *Trails 1–2: Untimed (explore freely)*
- *Trails 3–4: Timed (65 minutes)*
- *Trail 5: Strict test conditions*
- *Don't sprint — steady pace wins*

After Each Trail

- *Read every answer explanation*
- *Mark the topic, not just the question*
- *Log your results in the Expedition Log*
- *Study rough terrain before the next trail*

> *The best explorers don't avoid rough terrain — they study it. Every wrong answer is a trailhead to a deeper understanding. Follow those paths.*

Math Reference Sheet

You may use this page during your practice tests!

Symbol	Name	What It Means	
$(\ )$	Parentheses	Do this part first.	$(3+4) \times 2 = 14$
10^3	Exponent	Multiply the base by itself that many times. $10^3 = 1,000$	
$\frac{a}{b}$	Fraction	a parts out of b equal parts; also means $a \div b$.	
$\frac{7}{3}$	Improper Fraction	Numerator $\geq$ denominator.	$\frac{7}{3} = 2\frac{1}{3}$
0.45	Decimal	A number with a decimal point.	$0.45 = \frac{45}{100}$
$> < =$	Comparison	Greater than, less than, equal to.	$0.5 > 0.35$
$(3,5)$	Ordered Pair	A point on the coordinate plane: (x, y).	

🔢 Key Formulas

- **Volume of a rectangular prism:**

  $V = l \times w \times h$

- **Order of operations:**

  Parentheses → Exponents → Multiply/Divide

  → Add/Subtract

- **Powers of 10:**

  $10^1 = 10 \quad 10^2 = 100$

  $10^3 = 1,000 \quad 10^4 = 10,000$

- **Fraction as division:**

  $\frac{a}{b} = a \div b$

▦ Place Value Chart

Millions	1,000,000	**Decimals**	
Hundred-Thousands	100,000	Tenths	0.1
Ten-Thousands	10,000	Hundredths	0.01
Thousands	1,000	Thousandths	0.001
Hundreds	100		
Tens	10		
Ones	1		

*Each place is **10**× the place to its right, and $\frac{1}{10}$ of the place to its left.*

📖 Key Math Vocabulary

- **Sum** — *the result of addition*
- **Difference** — *the result of subtraction*
- **Product** — *the result of multiplication*
- **Quotient** — *the result of division*
- **Remainder** — *what's left over after dividing*
- **Factor** — *a number you multiply*
- **Expression** — *numbers and operations without =*
- **Equation** — *a math sentence with =*
- **Numerator** — *the top number of a fraction*
- **Denominator** — *the bottom number of a fraction*
- **Mixed number** — *a whole number + a fraction*
- **Equivalent fractions** — *fractions with equal value*
- **Decimal** — *a number written with a decimal point*
- **Volume** — *the space inside a 3D shape*
- **Coordinate plane** — *a grid with x and y axes*
- **Ordered pair** — *(x, y) location on the plane*

🔍 Word Problem Clue Words

- **Add (+):** *total, altogether, combined, sum, increase, more than*
- **Subtract (−):** *difference, how many more, fewer, remain, decrease, left*
- **Multiply (×):** *each, every, groups of, times, product, per, of (with fractions)*
- **Divide (÷):** *share equally, split, each group, how many groups, quotient, per*

Contents

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Practice Test 1

📋 *30 Questions*

✏️ *Before You Start* ✏️

✔ ***Read each question carefully*** *before choosing your answer.*

✔ ***Show your work*** *on scratch paper when you need to.*

✔ ***Skip hard questions*** *and come back to them later.*

✔ ***Check your answers*** *when you're done.*

✔ ***Take your time*** *— there's no rush!*

⭐ *You've Got This!* ⭐

Do your best and show what you know!

1. On a proportional graph, the point $(1, r)$ represents:

(A) The x-intercept

(B) The constant of proportionality

(C) The slope of the line

(D) Both B and C

2. Runner A passes through $(2, 10)$ and Runner B passes through $(2, 8)$. Both start at $(0, 0)$. Who is faster?

(A) Runner A

(B) Runner B

(C) They are the same speed

(D) Cannot be determined

3. A recipe for 4 people uses $\frac{3}{2}$ cups of rice. How much rice is needed for 10 people?

(A) $2\frac{1}{2}$ cups

(B) 3 cups

(C) $3\frac{3}{4}$ cups

(D) 5 cups

4. A baker made 120 cupcakes and sold 90 of them. What percent of the cupcakes were sold?

(A) 60%

(B) 70%

(C) 75%

(D) 80%

5. A delivery app charges a \$3 flat fee plus a 10% service fee on your order. If your order is \$30, what is the total?

$$\begin{array}{ccccccccc} | & | & | & | & | & | & | & | \rightarrow \\ 0 & 5 & 10 & 15 & 20 & 25 & 30 & 35 \end{array}$$
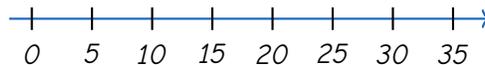
(A) \$33.00

(B) \$33.30

(C) \$36.00

(D) \$36.30

6. You guessed there were 300 people at a concert. The actual attendance was 350. Find the percent error (rounded to the nearest tenth).

Your Answer:

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7. Look at the number line. Which point has the greatest absolute value?
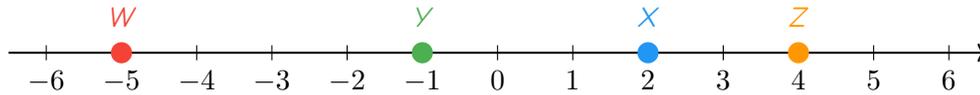
(A) W

(B) X

(C) Y

(D) Z

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8. What integer must you add to -15 to get -6?

Your Answer:

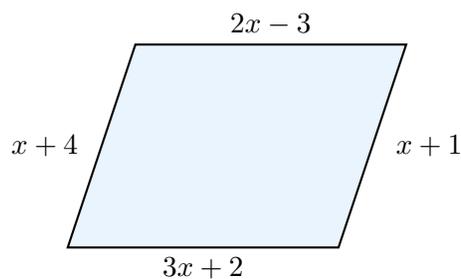**9.** What is the value of $3x - 5$ when $x = 4$?

(A) 2

(B) 7

(C) 17

(D) -2

10. The lengths of the four sides of a quadrilateral are shown below. What is the simplified perimeter?

$$2x - 3$$
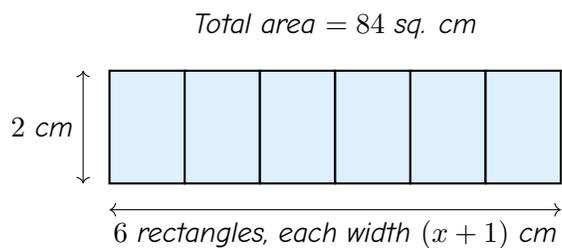
$$x + 4 \qquad x + 1$$

$$3x + 2$$

(A) $7x + 4$

(B) $6x + 4$

(C) $7x - 4$

(D) $6x + 10$

11. Solve $14 = 2m + 6$.

(A) $m = 4$

(B) $m = 10$

(C) $m = 8$

(D) $m = 3$

12. The total area of the figure below is 84 square cm. Find x.

Total area $= 84$ sq. cm

2 cm

6 rectangles, each width $(x + 1)$ cm

Your Answer:

13. The table shows input and output values for a function. What is the rule?

Input (x)	Output (y)
2	2.5
4	3.5
6	4.5
10	6.5

(A) $y = 0.5x + 1.5$

(B) $y = x - 0.5$

(C) $y = 0.25x + 2$

(D) $y = 2x - 1.5$

14. Which value of x is a solution to $4x - 1 > 11$?

(A) $x = 2$

(B) $x = 3$

(C) $x = 4$

(D) $x = 1$

15. True or false: The graph of $x < 5$ and $x \leq 5$ look exactly the same.

(A) True — both shade to the left of 5

(B) False — $x < 5$ has an open circle, $x \leq 5$ has a closed circle

(C) False — they shade in different directions

(D) True — the circle type does not matter

16. A floor plan uses $1\ cm = 3\ ft$. A room is $6\ cm$ long on this plan. If the same room is $2\ cm$ long on a new plan, what scale does the new plan use?

(A) $1\ cm = 1\ ft$

(B) $1\ cm = 6\ ft$

(C) $1\ cm = 9\ ft$

(D) $1\ cm = 12\ ft$

17. *Can a triangle have sides* 10 *cm,* 6 *cm, and* 3 *cm? Explain why or why not.*

Your Answer:

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18. *The table below shows four sets of triangle conditions. Which one produces a unique triangle?*

Set	Given Information	Condition
A	Angles: 50°, 60°, 70°	AAA
B	Sides: 3, 4, 5	SSS
C	Angles: 45°, 90°, 45°	AAA
D	One side: 8 cm	—

(A) Set A

(B) Set B

(C) Set C

(D) Set D

19. *Is it possible to get a circular cross-section from a rectangular prism? Explain.*

Your Answer:

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20. *What is the area of a circle with a radius of* 3 *cm? Use* $\pi \approx 3.14$.

(A) $9.42\ cm^2$

(B) $18.84\ cm^2$

(C) $28.26\ cm^2$

(D) $113.04\ cm^2$

21. *What is the first step to find the area of a composite shape?*

(A) Multiply all the side lengths

(B) Break it into simpler shapes

(C) Find the perimeter first

(D) Measure the diagonal

22. A triangular prism has two triangular bases each with area $15\ cm^2$. The three rectangular lateral faces have areas $40\ cm^2$, $30\ cm^2$, and $50\ cm^2$. What is the total surface area?

(A) $120\ cm^2$

(B) $135\ cm^2$

(C) $150\ cm^2$

(D) $165\ cm^2$

23. A triangular prism has a triangular base with base $10\ m$ and height $6\ m$. The prism is $8\ m$ long. What is the volume?

Your Answer:

24. Which sampling method is most likely to produce a representative sample of a school's students?

(A) Survey students in the cafeteria during lunch

(B) Survey every fifth student on an alphabetical class list

(C) Survey students who volunteer to participate

(D) Survey only students in honors classes

25. Data set: $4, 6, 7, 8, 10$. The mean is 7. Find the MAD.

Your Answer:

26. Explain one advantage of using IQR instead of range to describe the spread of a data set.

Your Answer:

27. A box contains 1 white ball, 1 black ball, and 1 gray ball. What is the probability of picking a white or gray ball?

(A) $\frac{1}{3}$ (B) $\frac{1}{2}$

(C) $\frac{2}{3}$ (D) 1

28. A fair die is rolled. Which probability model correctly shows the probability of each outcome?

(A) $P(1) = \frac{1}{6}$, $P(2) = \frac{1}{6}$, $P(3) = \frac{1}{6}$, $P(4) = \frac{1}{6}$, $P(5) = \frac{1}{6}$, $P(6) = \frac{1}{6}$

(B) $P(1) = \frac{1}{6}$, $P(2) = \frac{2}{6}$, $P(3) = \frac{3}{6}$, $P(4) = 0$, $P(5) = 0$, $P(6) = 0$

(C) $P(even) = \frac{1}{2}$, $P(odd) = \frac{1}{2}$

(D) $P(1) = \frac{1}{3}$, $P(2) = \frac{1}{3}$, $P(3) = \frac{1}{3}$

29. Two dice are rolled. What is the probability that the sum is 10 or greater? Write your answer as a fraction in simplest form.

Your Answer:

30. The table shows a simulation using random digits 0–9 to model a 30% chance of rain. Digits 0, 1, 2 represent rain. Based on the 10 trials below, what is the experimental probability of rain?

Trial	Digit	Rain?
1	5	No
2	1	Yes
3	8	No
4	0	Yes
5	3	No
6	7	No
7	2	Yes
8	9	No
9	4	No
10	6	No

(A) $\frac{2}{10} = 0.20$

(B) $\frac{3}{10} = 0.30$

(C) $\frac{4}{10} = 0.40$

(D) $\frac{7}{10} = 0.70$

⭐ *End of Practice Test 1* ⭐

Great job finishing the test!

☑ *My Score*

I got _____ out of 30 questions right.

*Check your answers in the **Answer Key** at the back of the book.*

💡 *Review any questions you missed. That's how we learn!*

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