



# LATEPASS.COM

## Summer Math Packet

Rising 8th Graders • 60 Days • 5 Questions Per Day

**Student Name:**

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Teacher / Parent:

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Answers are located at the back of this packet.

# How to Use This Packet

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This packet covers 60 days of math practice — one page per day — aligned with 7th grade skills to keep your child sharp for 8th grade.

## Tips for Success:

- Complete one day per day — no rush, no pressure!
- Work in a quiet spot with a pencil and scratch paper.
- Try all 5 questions before checking answers.
- The Answer Key is at the back — use it to check work after each day.
- Circle any missed questions and try them again the next day.

## Topics Covered:

- Rational number review, multi-step equations & inequalities
- Functions, linear equations, slope, and writing equations
- Systems of equations — graphing, substitution, and elimination
- Exponent rules, scientific notation, and square/cube roots
- Geometry — Pythagorean Theorem, transformations, congruence & similarity
- Volume of cylinders, cones, and spheres
- Scatter plots, bivariate data, two-way tables, and probability

**Day 1** Integer & Rational Number Review

Name: \_\_\_\_\_

1. What is  $-15 + 8$ ?

Answer: \_\_\_\_\_

2. What is  $-6 \times (-7)$ ?

Answer: \_\_\_\_\_

3. What is  $3/4 - (-1/2)$ ?

Answer: \_\_\_\_\_

4. What is  $-2.5 \times 4$ ?

Answer: \_\_\_\_\_

5. What is  $|-9| - |4|$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 2** Order of Operations with Negatives

Name: \_\_\_\_\_

1. Evaluate:  $-3^2 + 5$

Answer: \_\_\_\_\_

2. Evaluate:  $(-2)^3 + 1$

Answer: \_\_\_\_\_

3. Evaluate:  $-4 \times (3 - 7)$

Answer: \_\_\_\_\_

4. Evaluate:  $(5 - 8)^2 - 2$

Answer: \_\_\_\_\_

5. Evaluate:  $-12 \div (-3) + (-2)$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 3** Proportional Relationships Review

Name: \_\_\_\_\_

1. If  $y = kx$  and  $y = 18$  when  $x = 3$ , find  $k$ .

Answer: \_\_\_\_\_

2. Is the relationship  $y = 5x$  proportional? What is the unit rate?

Answer: \_\_\_\_\_

3. A table shows (2, 8), (4, 16), (6, 24). Write the equation.

Answer: \_\_\_\_\_

4. Does the graph of a proportional relationship always pass through which point?

Answer: \_\_\_\_\_

5. If 3 books cost \$21, what is the constant of proportionality (cost per book)?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 4** Percent Applications Review

Name: \_\_\_\_\_

1. A \$250 item is discounted 30%. What is the sale price?

Answer: \_\_\_\_\_

2. Find the simple interest on \$1,200 at 5% for 3 years.

Answer: \_\_\_\_\_

3. A population grows from 400 to 500. What is the percent increase?

Answer: \_\_\_\_\_

4. If 18 is 24% of a number, what is the number?

Answer: \_\_\_\_\_

5. A \$60 meal has an 18% tip. What is the total cost?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 5** Multi-Step Equations Review

Name: \_\_\_\_\_

1. Solve:  $3x + 7 = 22$

Answer: \_\_\_\_\_

2. Solve:  $2(x - 4) = 10$

Answer: \_\_\_\_\_

3. Solve:  $5x - 3 = 2x + 12$

Answer: \_\_\_\_\_

4. Solve:  $-3x + 8 = -1$

Answer: \_\_\_\_\_

5. Solve:  $(x + 2)/3 = 5$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 6** Equations with One, No, or Infinite Solutions

Name: \_\_\_\_\_

1. Solve:  $2x + 3 = 2x + 5$ . What does this tell you?

Answer: \_\_\_\_\_

2. Solve:  $3x + 6 = 3(x + 2)$ . What does this tell you?

Answer: \_\_\_\_\_

3. Solve:  $4x - 2 = 2x + 8$ .

Answer: \_\_\_\_\_

4. Solve:  $5(x + 1) = 5x + 5$ . What type of equation is this?

Answer: \_\_\_\_\_

5. Solve:  $x + 7 = x - 2$ . What type of equation is this?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 7** Equations with Variables on Both Sides

Name: \_\_\_\_\_

1. Solve:  $6x - 5 = 3x + 10$

Answer: \_\_\_\_\_

2. Solve:  $2(x + 3) = 3(x - 1)$

Answer: \_\_\_\_\_

3. Solve:  $7x + 2 = 4x + 17$

Answer: \_\_\_\_\_

4. Solve:  $9 - 2x = 3x - 6$

Answer: \_\_\_\_\_

5. Solve:  $4(x - 2) = 2(x + 4)$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 8** Equations with Distribution & Fractions

Name: \_\_\_\_\_

1. Solve:  $(1/2)(x + 4) = 6$

Answer: \_\_\_\_\_

2. Solve:  $(2/3)x - 1 = 5$

Answer: \_\_\_\_\_

3. Solve:  $3(x/2 - 1) = 9$

Answer: \_\_\_\_\_

4. Solve:  $(x - 3)/4 = 2$

Answer: \_\_\_\_\_

5. Solve:  $2(x + 1)/3 = 4$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 9** Functions — Intro

Name: \_\_\_\_\_

1. What is a function?

Answer: \_\_\_\_\_

2. If  $f(x) = 2x + 1$ , find  $f(3)$ .

Answer: \_\_\_\_\_

3. If  $f(x) = x^2 - 2$ , find  $f(-2)$ .

Answer: \_\_\_\_\_

4. Is the set  $\{(1,2), (1,5), (2,4)\}$  a function?

Answer: \_\_\_\_\_

5. If  $f(x) = 3x$ , find  $x$  such that  $f(x) = 15$ .

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 10** Identifying Functions from Tables & Graphs

Name: \_\_\_\_\_

1. A table shows  $x$ : 1,2,3 and  $y$ : 4,4,4. Is this a function?

Answer: \_\_\_\_\_

2. What test is used to determine if a graph represents a function?

Answer: \_\_\_\_\_

3. If a vertical line crosses a graph more than once, is it a function?

Answer: \_\_\_\_\_

4. What is the domain of a function with points (1,3), (2,5), (3,7)?

Answer: \_\_\_\_\_

5. What is the range of the function in the previous question?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 11** Rate of Change & Slope

Name: \_\_\_\_\_

1. Find the slope between (2, 3) and (5, 9).

Answer: \_\_\_\_\_

2. Find the slope between (0, 4) and (4, 0).

Answer: \_\_\_\_\_

3. What does a slope of 0 mean for a line?

Answer: \_\_\_\_\_

4. What does an undefined slope mean?

Answer: \_\_\_\_\_

5. Find the slope between (-1, -2) and (3, 6).

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 12** Slope-Intercept Form

Name: \_\_\_\_\_

1. In  $y = mx + b$ , what does  $b$  represent?

Answer: \_\_\_\_\_

2. Write the equation of a line with slope 3 and y-intercept  $-2$ .

Answer: \_\_\_\_\_

3. Find the slope and y-intercept of  $y = -4x + 7$ .

Answer: \_\_\_\_\_

4. Convert  $2x + y = 5$  to slope-intercept form.

Answer: \_\_\_\_\_

5. What is the y-intercept of  $y = 5x$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 13** Graphing Linear Functions

Name: \_\_\_\_\_

1. What two points can you use to graph  $y = 2x + 1$  quickly?

Answer: \_\_\_\_\_

2. Find the x-intercept of  $y = 3x - 6$ .

Answer: \_\_\_\_\_

3. Is the point (2, 5) on the line  $y = 2x + 1$ ?

Answer: \_\_\_\_\_

4. What is the slope of a line parallel to  $y = 5x - 1$ ?

Answer: \_\_\_\_\_

5. What is the slope of a line perpendicular to  $y = 2x + 3$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 14** Writing Linear Equations

Name: \_\_\_\_\_

1. Write the equation of a line through (0, 3) with slope  $-2$ .

Answer: \_\_\_\_\_

2. Write the equation of a line through (1, 5) and (3, 9).

Answer: \_\_\_\_\_

3. Write the equation of a horizontal line through (4,  $-1$ ).

Answer: \_\_\_\_\_

4. Write the equation of a vertical line through (2, 6).

Answer: \_\_\_\_\_

5. Write the equation of a line through (2, 1) with slope 3.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 15** Linear Function Word Problems

Name: \_\_\_\_\_

1. A taxi charges \$4 plus \$2 per mile. Write a function  $c(m)$  for the cost.

Answer: \_\_\_\_\_

2. Using  $c(m) = 2m + 4$ , find the cost for a 5-mile ride.

Answer: \_\_\_\_\_

3. A plant is 4 inches tall and grows 1.5 inches per week. Write a function for height  $h(w)$ .

Answer: \_\_\_\_\_

4. A gym membership costs \$50 to join plus \$25/month. Write a cost function and find the cost for 6 months.

Answer: \_\_\_\_\_

5. If a function has a rate of change of 0 and an initial value of 10, what is the function?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 16** Systems of Equations — Graphing

Name: \_\_\_\_\_

1. What does the solution to a system of two linear equations represent graphically?

Answer: \_\_\_\_\_

2. How many solutions does a system have if the lines are parallel (different y-intercepts)?

Answer: \_\_\_\_\_

3. How many solutions does a system have if both equations represent the same line?

Answer: \_\_\_\_\_

4. Is  $(3, 4)$  a solution to the system  $y = x + 1$  and  $y = -x + 7$ ?

Answer: \_\_\_\_\_

5. How many solutions does a system have if the lines intersect once?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 17** Systems — Solving by Substitution

Name: \_\_\_\_\_

1. Solve:  $y = 2x$  and  $x + y = 9$

Answer: \_\_\_\_\_

2. Solve:  $y = x + 4$  and  $2x + y = 10$

Answer: \_\_\_\_\_

3. Solve:  $x = 2y - 1$  and  $x + y = 8$

Answer: \_\_\_\_\_

4. Solve:  $y = 3x - 2$  and  $y = x + 2$

Answer: \_\_\_\_\_

5. Solve:  $y = -x + 5$  and  $y = 2x - 1$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 18** Systems — Solving by Elimination

Name: \_\_\_\_\_

1. Solve:  $x + y = 10$  and  $x - y = 2$

Answer: \_\_\_\_\_

2. Solve:  $2x + y = 11$  and  $x + y = 7$

Answer: \_\_\_\_\_

3. Solve:  $3x + 2y = 16$  and  $x + 2y = 8$

Answer: \_\_\_\_\_

4. Solve:  $2x - y = 4$  and  $x + y = 5$

Answer: \_\_\_\_\_

5. Solve:  $4x + y = 14$  and  $2x + y = 8$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 19** Systems — Word Problems

Name: \_\_\_\_\_

1. The sum of two numbers is 25 and their difference is 7. Find the numbers.

Answer: \_\_\_\_\_

2. Adult tickets are \$8, child tickets \$5. 10 tickets cost \$65 total. How many of each?

Answer: \_\_\_\_\_

3. A jar has nickels and quarters worth \$3.00, totaling 20 coins. How many of each?

Answer: \_\_\_\_\_

4. Two numbers have a sum of 40. One is 3 times the other. Find both numbers.

Answer: \_\_\_\_\_

5. A plane travels 600 miles in 2 hours with the wind and 600 miles in 3 hours against it. Find the plane's speed and wind speed.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 20** Mixed Review — Weeks 1–4

Name: \_\_\_\_\_

1. Solve:  $4x - 3 = 2x + 9$

Answer: \_\_\_\_\_

2. Find the slope between (1, 1) and (4, 10).

Answer: \_\_\_\_\_

3. Solve the system:  $x + y = 12$ ,  $x - y = 4$

Answer: \_\_\_\_\_

4. If  $f(x) = 2x - 5$ , find  $f(4)$ .

Answer: \_\_\_\_\_

5. What is  $-2/3 \times 3/4$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 21** Laws of Exponents

Name: \_\_\_\_\_

1. Simplify:  $x^4 \cdot x^3$

Answer: \_\_\_\_\_

2. Simplify:  $x^8 \div x^3$

Answer: \_\_\_\_\_

3. Simplify:  $(x^2)^4$

Answer: \_\_\_\_\_

4. Simplify:  $(2x^3)^2$

Answer: \_\_\_\_\_

5. Simplify:  $(xy^2)^3$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 22** Negative & Zero Exponents

Name: \_\_\_\_\_

1. Evaluate:  $7^0$ 

Answer: \_\_\_\_\_

2. Evaluate:  $2^{-3}$ 

Answer: \_\_\_\_\_

3. Simplify:  $x^{-2}$ 

Answer: \_\_\_\_\_

4. Simplify:  $x^3 \cdot x^{-5}$ 

Answer: \_\_\_\_\_

5. Simplify:  $(3^{-1})^2$ 

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 23** Scientific Notation — Converting

Name: \_\_\_\_\_

1. Write 56,000,000 in scientific notation.

Answer: \_\_\_\_\_

2. Write 0.0042 in scientific notation.

Answer: \_\_\_\_\_

3. Write  $3.1 \times 10^5$  in standard form.

Answer: \_\_\_\_\_

4. Write  $7.8 \times 10^{-3}$  in standard form.

Answer: \_\_\_\_\_

5. Write 920,000 in scientific notation.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 24** Operations with Scientific Notation

Name: \_\_\_\_\_

1. Multiply:  $(2 \times 10^3)(3 \times 10^4)$

Answer: \_\_\_\_\_

2. Divide:  $(8 \times 10^6) \div (2 \times 10^2)$

Answer: \_\_\_\_\_

3. Add:  $(3 \times 10^4) + (5 \times 10^3)$

Answer: \_\_\_\_\_

4. Multiply:  $(1.5 \times 10^2)(4 \times 10^3)$

Answer: \_\_\_\_\_

5. Which is larger:  $4 \times 10^5$  or  $3.9 \times 10^6$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 25** Square Roots & Cube Roots

Name: \_\_\_\_\_

1. Evaluate:  $\sqrt{81}$ 

Answer: \_\_\_\_\_

2. Evaluate:  $\sqrt[3]{64}$ 

Answer: \_\_\_\_\_

3. Between which two integers is  $\sqrt{70}$ ?

Answer: \_\_\_\_\_

4. Simplify:  $\sqrt{32}$ 

Answer: \_\_\_\_\_

5. Solve:  $x^2 = 49$ 

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 26** The Pythagorean Theorem

Name: \_\_\_\_\_

1. State the Pythagorean Theorem.

Answer: \_\_\_\_\_

2. Find the hypotenuse of a right triangle with legs 6 and 8.

Answer: \_\_\_\_\_

3. A right triangle has hypotenuse 17 and one leg 8. Find the other leg.

Answer: \_\_\_\_\_

4. Is a triangle with sides 9, 12, 15 a right triangle?

Answer: \_\_\_\_\_

5. Find the hypotenuse of a right triangle with legs 5 and 12.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 27** Pythagorean Theorem —  
Applications

Name: \_\_\_\_\_

1. A ladder leans against a wall, reaching 12 ft up. The base is 5 ft from the wall. How long is the ladder?

Answer: \_\_\_\_\_

2. Find the distance between (0,0) and (3,4) using the Pythagorean Theorem.

Answer: \_\_\_\_\_

3. A TV is advertised as 50 inches (diagonal). If the height is 30 inches, what is the width?

Answer: \_\_\_\_\_

4. A rectangular field is 30m by 40m. What is the length of its diagonal?

Answer: \_\_\_\_\_

5. Find the distance between (1,2) and (4,6).

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 28** Transformations — Translations & Reflections

Name: \_\_\_\_\_

1. If point  $(3, 5)$  is translated 2 units right and 4 units down, what is the new point?

Answer: \_\_\_\_\_

2. What happens to  $(x, y)$  when reflected over the  $x$ -axis?

Answer: \_\_\_\_\_

3. What happens to  $(x, y)$  when reflected over the  $y$ -axis?

Answer: \_\_\_\_\_

4. Does a translation change the size or shape of a figure?

Answer: \_\_\_\_\_

5. If  $(-2, 3)$  is reflected over the  $x$ -axis, what is the new point?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 29** Transformations — Rotations & Dilations

Name: \_\_\_\_\_

1. What happens to  $(x, y)$  under a  $180^\circ$  rotation about the origin?

Answer: \_\_\_\_\_

2. What happens to  $(x, y)$  under a  $90^\circ$  counterclockwise rotation about the origin?

Answer: \_\_\_\_\_

3. What is a dilation?

Answer: \_\_\_\_\_

4. If  $(4, 6)$  is dilated by a factor of 2 (centered at origin), what is the new point?

Answer: \_\_\_\_\_

5. Does a dilation by a factor of 1 change the figure?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 30** Mixed Review — Weeks 5–6

Name: \_\_\_\_\_

1. Simplify:  $x^5 \cdot x^{-2}$

Answer: \_\_\_\_\_

2. Find the hypotenuse of a right triangle with legs 7 and 24.

Answer: \_\_\_\_\_

3. Write 0.00056 in scientific notation.

Answer: \_\_\_\_\_

4. If  $(5, -3)$  is rotated  $180^\circ$  about the origin, what is the new point?

Answer: \_\_\_\_\_

5. Solve:  $3x + 8 = 5x - 4$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 31** Congruent Figures

Name: \_\_\_\_\_

1. What does it mean for two figures to be congruent?

Answer: \_\_\_\_\_

2. What transformations preserve congruence?

Answer: \_\_\_\_\_

3. If triangle ABC is congruent to triangle DEF, and  $AB = 5$ , what is DE?

Answer: \_\_\_\_\_

4. Does a dilation (other than scale factor 1) preserve congruence?

Answer: \_\_\_\_\_

5. If two figures are congruent, are their areas equal?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 32** Similar Figures & Scale Factor  
Review

Name: \_\_\_\_\_

1. What does it mean for two figures to be similar?

Answer: \_\_\_\_\_

2. Two similar triangles have a scale factor of 3. If a side of the small triangle is 4, what is the corresponding side of the large triangle?

Answer: \_\_\_\_\_

3. If two figures are similar with scale factor  $k$ , how do their areas compare?

Answer: \_\_\_\_\_

4. Two similar rectangles have a scale factor of  $1/2$ . If the area of the larger is 80, what is the area of the smaller?

Answer: \_\_\_\_\_

5. If two polygons are similar, are corresponding angles equal or proportional?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 33** Angle Relationships with Parallel Lines

Name: \_\_\_\_\_

1. What are corresponding angles?

Answer: \_\_\_\_\_

2. What are alternate interior angles?

Answer: \_\_\_\_\_

3. If two parallel lines are cut by a transversal and one angle is  $70^\circ$ , what is its corresponding angle?

Answer: \_\_\_\_\_

4. What is the relationship between co-interior (same-side interior) angles?

Answer: \_\_\_\_\_

5. If alternate interior angles are equal and one is  $3x$  and the other is  $60^\circ$ , find  $x$ .

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 34** Angle Sum & Exterior Angle  
Theorems

Name: \_\_\_\_\_

1. What is the sum of the interior angles of a triangle?

Answer: \_\_\_\_\_

2. What is the sum of the interior angles of a quadrilateral?

Answer: \_\_\_\_\_

3. The exterior angle of a triangle equals the sum of which two angles?

Answer: \_\_\_\_\_

4. If two interior angles of a triangle are  $50^\circ$  and  $70^\circ$ , what is the exterior angle at the third vertex?

Answer: \_\_\_\_\_

5. A regular pentagon has interior angles summing to how many degrees?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 35** Mixed Review — Week 7

Name: \_\_\_\_\_

1. Two similar figures have scale factor 4. If one area is 5, what is the other?

Answer: \_\_\_\_\_

2. If two parallel lines are cut by a transversal, and one angle is  $110^\circ$ , find its alternate interior angle.

Answer: \_\_\_\_\_

3. Solve:  $2(x - 3) = 4x - 10$

Answer: \_\_\_\_\_

4. Find the hypotenuse of a right triangle with legs 9 and 40.

Answer: \_\_\_\_\_

5. What is  $2.5 \times 10^3 + 1.5 \times 10^3$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 36** Volume of Cylinders

Name: \_\_\_\_\_

1. What is the formula for the volume of a cylinder?

Answer: \_\_\_\_\_

2. Find the volume of a cylinder with radius 3 and height 7 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

3. Find the volume of a cylinder with radius 5 and height 10 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

4. A cylindrical tank has a diameter of 4 ft and height of 6 ft. Find its volume ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

5. If a cylinder's volume is 314 cubic units and its radius is 5 ( $\pi \approx 3.14$ ), find its height.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 37** Volume of Cones

Name: \_\_\_\_\_

1. What is the formula for the volume of a cone?

Answer: \_\_\_\_\_

2. Find the volume of a cone with radius 3 and height 6 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

3. How does the volume of a cone compare to a cylinder with the same base and height?

Answer: \_\_\_\_\_

4. Find the volume of a cone with radius 4 and height 9 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

5. A cone has a volume of 100.48 cubic units and radius 4 ( $\pi \approx 3.14$ ). Find the height.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 38** Volume of Spheres

Name: \_\_\_\_\_

1. What is the formula for the volume of a sphere?

Answer: \_\_\_\_\_

2. Find the volume of a sphere with radius 3 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

3. Find the volume of a sphere with radius 6 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

4. A basketball has a radius of about 12 cm. What is its approximate volume ( $\pi \approx 3.14$ )?

Answer: \_\_\_\_\_

5. If a sphere has a radius of 1, what is its volume in terms of  $\pi$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 39** Volume — Mixed Word Problems

Name: \_\_\_\_\_

1. A cylindrical can has radius 2 and height 5. Find its volume ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

2. An ice cream cone has radius 2 and height 6. Find its volume ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

3. A sphere-shaped balloon has a radius of 3 inches. Find its volume ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

4. A cylinder and a cone have the same radius (3) and height (6). What is the combined volume ( $\pi \approx 3.14$ )?

Answer: \_\_\_\_\_

5. Find the volume of a hemisphere with radius 3 (half of a sphere,  $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 40** Mixed Review — Weeks 7–8

Name: \_\_\_\_\_

1. Find the volume of a cylinder with radius 2 and height 10 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

2. Two similar triangles have a scale factor of 5. If a small side is 2, what is the large side?

Answer: \_\_\_\_\_

3. Solve:  $7x - 4 = 3x + 16$

Answer: \_\_\_\_\_

4. Find the volume of a cone with radius 6 and height 4 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

5. What is  $\sqrt{100} + \sqrt{49}$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 41** Scatter Plots — Intro

Name: \_\_\_\_\_

1. What does a scatter plot show?

Answer: \_\_\_\_\_

2. What is a 'positive association' in a scatter plot?

Answer: \_\_\_\_\_

3. What is a 'negative association' in a scatter plot?

Answer: \_\_\_\_\_

4. What does it mean if a scatter plot shows no clear pattern?

Answer: \_\_\_\_\_

5. What is an outlier in a scatter plot?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 42** Lines of Best Fit

Name: \_\_\_\_\_

1. What is the purpose of a line of best fit?

Answer: \_\_\_\_\_

2. If a line of best fit is  $y = 2x + 5$ , predict  $y$  when  $x = 10$ .

Answer: \_\_\_\_\_

3. What does the slope of a line of best fit represent in context?

Answer: \_\_\_\_\_

4. What does the  $y$ -intercept of a line of best fit represent?

Answer: \_\_\_\_\_

5. If a line of best fit is  $y = -3x + 100$ , what happens to  $y$  as  $x$  increases?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 43** Two-Way Tables

Name: \_\_\_\_\_

1. What does a two-way table show?

Answer: \_\_\_\_\_

2. If a two-way table shows 30 students total, 18 like math, and 12 don't, what fraction likes math?

Answer: \_\_\_\_\_

3. What is a 'relative frequency' in a two-way table?

Answer: \_\_\_\_\_

4. If 20 out of 50 students play sports, what is the relative frequency (as a percent)?

Answer: \_\_\_\_\_

5. How can you use a two-way table to check for an association between variables?

Answer: \_\_\_\_\_

**Score: \_\_\_ / 5**

**Day 44** Interpreting Slope & Intercept in Context

Name: \_\_\_\_\_

1. A function models cost:  $c(x) = 5x + 20$ , where  $x$  is hours. What does 5 represent?

Answer: \_\_\_\_\_

2. In the function above, what does 20 represent?

Answer: \_\_\_\_\_

3. If a graph shows distance vs. time with slope 60, what does this represent?

Answer: \_\_\_\_\_

4. A line of best fit for height vs. age has slope 2.5. What does this mean?

Answer: \_\_\_\_\_

5. If the y-intercept of a height-vs-age graph is 20, what might that represent?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 45** Mixed Review — Week 9

Name: \_\_\_\_\_

1. If a scatter plot shows a negative association, what does the line of best fit's slope look like?

Answer: \_\_\_\_\_

2. Solve:  $6x + 3 = 2x + 19$

Answer: \_\_\_\_\_

3. Find the volume of a sphere with radius 2 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

4. If a line of best fit is  $y = 4x - 2$ , find  $y$  when  $x = 3$ .

Answer: \_\_\_\_\_

5. What is the relative frequency of 15 out of 60?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 46** Linear vs. Nonlinear Functions

Name: \_\_\_\_\_

1. What does the graph of a linear function look like?

Answer: \_\_\_\_\_

2. Is  $y = x^2$  a linear or nonlinear function?

Answer: \_\_\_\_\_

3. Is  $y = 3x - 1$  linear or nonlinear?

Answer: \_\_\_\_\_

4. If a table shows constant rate of change, is the function linear or nonlinear?

Answer: \_\_\_\_\_

5. Is the function describing the area of a square ( $A = s^2$ ) linear or nonlinear?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 47** Comparing Functions

Name: \_\_\_\_\_

1. Function A:  $y = 2x + 3$ . Function B:  $y = 3x + 1$ . Which has a steeper slope?

Answer: \_\_\_\_\_

2. If Function A has a y-intercept of 5 and Function B has a y-intercept of 2, which starts higher?

Answer: \_\_\_\_\_

3. Two functions have the same slope but different y-intercepts. Are their graphs parallel?

Answer: \_\_\_\_\_

4. Function A is given by a table showing y increases by 4 each time x increases by 1. What is the slope?

Answer: \_\_\_\_\_

5. If two linear functions intersect at one point, what does that point represent?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 48** Qualitative Graphs

Name: \_\_\_\_\_

1. A graph shows distance from home over time, with the line going up, flat, then up again. What does the flat part represent?

Answer: \_\_\_\_\_

2. If a graph of temperature over a day rises then falls, what time of day might the peak represent?

Answer: \_\_\_\_\_

3. A graph shows a steep increase followed by a gentle increase. What does this suggest about rate of change?

Answer: \_\_\_\_\_

4. If a graph is a horizontal line, what does that indicate about the quantity over time?

Answer: \_\_\_\_\_

5. A graph of a bathtub filling shows a steady increase then a sudden drop. What does the drop represent?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 49** Volume & Surface Area Word Problems II

Name: \_\_\_\_\_

1. A cylindrical water tank has radius 4 ft and height 10 ft. Find its volume ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

2. A spherical tank has a radius of 5 ft. Find its volume ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

3. A cone-shaped funnel has radius 3 and height 8. Find its volume ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

4. A cylinder has volume 200.96 cubic units and height 8 ( $\pi \approx 3.14$ ). Find the radius.

Answer: \_\_\_\_\_

5. If a sphere is cut in half, what is the volume of one hemisphere with radius 4 ( $\pi \approx 3.14$ )?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 50** Mixed Review — Week 10

Name: \_\_\_\_\_

1. Is  $y = 5/x$  linear or nonlinear?

Answer: \_\_\_\_\_

2. Find the volume of a cylinder with radius 1 and height 1 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

3. Solve:  $8x - 5 = 3x + 20$

Answer: \_\_\_\_\_

4. What does a horizontal segment on a distance-time graph represent?

Answer: \_\_\_\_\_

5. If  $f(x) = x^2 + 1$ , find  $f(3)$ .

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 51** Rational vs. Irrational Numbers

Name: \_\_\_\_\_

1. What is a rational number?

Answer: \_\_\_\_\_

2. What is an irrational number?

Answer: \_\_\_\_\_

3. Is  $\sqrt{16}$  rational or irrational?

Answer: \_\_\_\_\_

4. Is  $\sqrt{7}$  rational or irrational?

Answer: \_\_\_\_\_

5. Is  $\pi$  rational or irrational?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 52** Approximating Irrational Numbers

Name: \_\_\_\_\_

1. Between which two whole numbers does  $\sqrt{20}$  fall?

Answer: \_\_\_\_\_

2. Estimate  $\sqrt{50}$  to the nearest whole number.

Answer: \_\_\_\_\_

3. Is  $\sqrt{2}$  closer to 1.4 or 1.5?

Answer: \_\_\_\_\_

4. Order from least to greatest: 3,  $\sqrt{8}$ ,  $\pi$ , 3.5

Answer: \_\_\_\_\_

5. Estimate the value of  $\pi^2$  to one decimal place.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 53** Probability — Compound Events  
Review

Name: \_\_\_\_\_

1. Two dice are rolled. What is the probability of getting a sum of 8?

Answer: \_\_\_\_\_

2. A coin is flipped 3 times. What is the probability of getting all heads?

Answer: \_\_\_\_\_

3. A bag has 4 red and 6 blue marbles. If two are drawn without replacement, what is  $P(\text{both red})$ ?

Answer: \_\_\_\_\_

4. What is the total number of outcomes when flipping a coin and rolling a die?

Answer: \_\_\_\_\_

5. If  $P(A) = 0.4$  and  $P(B) = 0.5$ , and  $A$  and  $B$  are independent, what is  $P(A \text{ and } B)$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 54** Real-World Applications — Mixed

Name: \_\_\_\_\_

1. A cell phone plan costs \$30 plus \$0.05 per text. Write a function and find the cost for 100 texts.

Answer: \_\_\_\_\_

2. A rectangular prism has volume 120 and base area 24. Find the height.

Answer: \_\_\_\_\_

3. If a map scale is 1 in = 10 mi, how many miles is 4.5 inches?

Answer: \_\_\_\_\_

4. The sum of two numbers is 50, and one is 4 times the other. Find both numbers.

Answer: \_\_\_\_\_

5. A right triangle has legs 10 and 24. Find the hypotenuse.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 55** Mixed Review — Week 11

Name: \_\_\_\_\_

1. Is 0.333... (repeating) rational or irrational?

Answer: \_\_\_\_\_

2. Estimate  $\sqrt{30}$  to the nearest whole number.

Answer: \_\_\_\_\_

3. Solve:  $3(2x - 1) = 4x + 7$

Answer: \_\_\_\_\_

4. A coin is flipped twice. What is  $P(\text{at least one heads})$ ?

Answer: \_\_\_\_\_

5. Find the volume of a cone with radius 5 and height 6 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 56** Comprehensive Review I

Name: \_\_\_\_\_

1. Solve:  $5x - 2 = 3x + 10$

Answer: \_\_\_\_\_

2. Find the slope between (2, 5) and (6, 13).

Answer: \_\_\_\_\_

3. Solve the system:  $y = x + 2$  and  $2x + y = 11$

Answer: \_\_\_\_\_

4. Simplify:  $x^6 \div x^2$

Answer: \_\_\_\_\_

5. Find the hypotenuse of a right triangle with legs 8 and 15.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 57** Comprehensive Review II

Name: \_\_\_\_\_

1. Write 4,200,000 in scientific notation.

Answer: \_\_\_\_\_

2. Find the volume of a cylinder with radius 4 and height 5 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

3. Solve:  $2(x + 5) = 3x - 1$

Answer: \_\_\_\_\_

4. Is  $\sqrt{36}$  rational or irrational?

Answer: \_\_\_\_\_

5. What is the y-intercept of  $y = -2x + 9$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 58** Comprehensive Review III

Name: \_\_\_\_\_

1. Find the volume of a sphere with radius 3 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

2. Solve:  $7x + 3 = 4x + 18$

Answer: \_\_\_\_\_

3. Two similar figures have scale factor  $1/3$ . If the larger area is 90, what is the smaller area?

Answer: \_\_\_\_\_

4. Write the equation of a line through  $(0, -4)$  with slope  $1/2$ .

Answer: \_\_\_\_\_

5. What is  $6 \times 10^4 + 2 \times 10^4$ ?

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 59** Comprehensive Review IV

Name: \_\_\_\_\_

1. Solve the system:  $x - y = 3$  and  $x + y = 11$

Answer: \_\_\_\_\_

2. If  $f(x) = 3x - 4$ , find  $f(5)$ .

Answer: \_\_\_\_\_

3. A right triangle has legs 20 and 21. Find the hypotenuse.

Answer: \_\_\_\_\_

4. Find the volume of a cone with radius 6 and height 7 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

5. Estimate  $\sqrt{45}$  between two consecutive integers.

Answer: \_\_\_\_\_

Score: \_\_\_ / 5

**Day 60** Day 60 — Ready for 8th Grade! 

Name: \_\_\_\_\_

1. Solve:  $4(x - 2) = 2x + 6$

Answer: \_\_\_\_\_

2. Write the equation of a line through (1, 4) and (3, 10).

Answer: \_\_\_\_\_

3. Find the volume of a cylinder with radius 5 and height 12 ( $\pi \approx 3.14$ ).

Answer: \_\_\_\_\_

4. Solve the system:  $2x + y = 12$  and  $x - y = 3$

Answer: \_\_\_\_\_

5. Simplify:  $(2x^2)^3$

Answer: \_\_\_\_\_

Score: \_\_\_ / 5



# ANSWER KEY

LatePass.com Summer Math Packet — Rising 8th Grade

Check your answers after completing each day!

**Day 1** Integer & Rational Number Review

1  $-7$

2  $42$

3  $5/4$  (or  $1\ 1/4$ )

4  $-10$

5  $5$

**Day 2** Order of Operations with Negatives

1  $-4$

2  $-7$

3  $16$

4  $7$

5  $2$

**Day 3** Proportional Relationships Review

1  $k = 6$

2 Yes; unit rate = 5

3  $y = 4x$

4 The origin (0,0)

5  $\$7$

**Day 4** Percent Applications Review

1  $\$175$

2  $\$180$

3  $25\%$

4  $75$

5  $\$70.80$

**Day 5** Multi-Step Equations Review

1  $x = 5$

2  $x = 9$

3  $x = 5$

4  $x = 3$

5  $x = 13$

**Day 6** Equations with One, No, or Infinite Solutions

1 No solution ( $3 \neq 5$ )

2 Infinitely many solutions ( $6 = 6$  is always true)

3  $x = 5$  (one solution)

4 Infinitely many solutions (identity)

5 No solution

**Day 7** Equations with Variables on Both Sides

1  $x = 5$

2  $x = 9$

3  $x = 5$

4  $x = 3$

5  $x = 8$

**Day 8** Equations with Distribution & Fractions

1  $x = 8$

2  $x = 9$

3  $x = 8$

4  $x = 11$

5  $x = 5$

**Day 9** Functions — Intro

1 A relation where each input has exactly one output

2  $f(3) = 7$

3  $f(-2) = 2$

4 No — input 1 has two different outputs

5  $x = 5$

**Day 10** Identifying Functions from Tables & Graphs

1 Yes — each input has exactly one output

2 The vertical line test

3 No

4  $\{1, 2, 3\}$ 5  $\{3, 5, 7\}$ **Day 11** Rate of Change & Slope

1  $m = 2$

2  $m = -1$

3 It's horizontal (no change in  $y$ )

4 The line is vertical

5  $m = 2$

**Day 12** Slope-Intercept Form1 The  $y$ -intercept

2  $y = 3x - 2$

3 Slope =  $-4$ ,  $y$ -intercept =  $7$ 

4  $y = -2x + 5$

5  $0$  (passes through the origin)

**Day 13** Graphing Linear Functions

- 1 y-intercept (0,1) and another point like (1,3)
- 2 (2, 0)
- 3 Yes ( $2(2)+1=5$ )
- 4 5
- 5  $-1/2$

**Day 14** Writing Linear Equations

- 1  $y = -2x + 3$
- 2  $y = 2x + 3$
- 3  $y = -1$
- 4  $x = 2$
- 5  $y = 3x - 5$

**Day 15** Linear Function Word Problems

- 1  $c(m) = 2m + 4$
- 2 \$14
- 3  $h(w) = 1.5w + 4$
- 4  $c(m) = 25m + 50$ ;  $c(6) = \$200$
- 5  $y = 10$  (constant function)

**Day 16** Systems of Equations — Graphing

- 1 The point where the two lines intersect
- 2 No solution
- 3 Infinitely many solutions
- 4 Yes — it satisfies both
- 5 One solution

**Day 17** Systems — Solving by Substitution

- 1  $x = 3, y = 6$
- 2  $x = 2, y = 6$
- 3  $x = 5, y = 3$
- 4  $x = 2, y = 4$
- 5  $x = 2, y = 3$

**Day 18** Systems — Solving by Elimination

- 1  $x = 6, y = 4$
- 2  $x = 4, y = 3$
- 3  $x = 4, y = 2$
- 4  $x = 3, y = 2$
- 5  $x = 3, y = 2$

**Day 19** Systems — Word Problems

- 1 16 and 9
- 2 5 adult, 5 child
- 3 5 quarters, 15 nickels
- 4 30 and 10
- 5 Plane speed = 250 mph, wind = 50 mph

**Day 20** Mixed Review — Weeks 1–4

- 1  $x = 6$
- 2  $m = 3$
- 3  $x = 8, y = 4$
- 4 3
- 5  $-1/2$

**Day 21** Laws of Exponents

- 1  $x^7$
- 2  $x^5$
- 3  $x^8$
- 4  $4x^6$
- 5  $x^3y^6$

**Day 22** Negative & Zero Exponents

- 1 1
- 2  $1/8$
- 3  $1/x^2$
- 4  $x^{-2} = 1/x^2$
- 5  $1/9$

**Day 23** Scientific Notation — Converting

- 1  $5.6 \times 10^7$
- 2  $4.2 \times 10^{-3}$
- 3 310,000
- 4 0.0078
- 5  $9.2 \times 10^5$

**Day 24** Operations with Scientific Notation

- 1  $6 \times 10^7$
- 2  $4 \times 10^4$
- 3  $3.5 \times 10^4$
- 4  $6 \times 10^5$
- 5  $3.9 \times 10^6$

**Day 25** Square Roots & Cube Roots

- 1 9
- 2 4
- 3 Between 8 and 9
- 4  $4\sqrt{2}$
- 5  $x = \pm 7$

**Day 27** Pythagorean Theorem — Applications

- 1 13 ft
- 2 5 units
- 3 40 inches
- 4 50 meters
- 5 5 units

**Day 29** Transformations — Rotations & Dilations

- 1  $(-x, -y)$
- 2  $(-y, x)$
- 3 A transformation that resizes a figure by a scale factor
- 4  $(8, 12)$
- 5 No — the figure stays the same size

**Day 26** The Pythagorean Theorem

- 1  $a^2 + b^2 = c^2$  (legs squared sum equals hypotenuse squared)
- 2 10
- 3 15
- 4 Yes ( $9^2 + 12^2 = 15^2$ )
- 5 13

**Day 28** Transformations — Translations & Reflections

- 1  $(5, 1)$
- 2  $(x, -y)$
- 3  $(-x, y)$
- 4 No — it only changes position
- 5  $(-2, -3)$

**Day 30** Mixed Review — Weeks 5–6

- 1  $x^3$
- 2 25
- 3  $5.6 \times 10^{-4}$
- 4  $(-5, 3)$
- 5  $x = 6$

**Day 31** Congruent Figures

- 1 They have the same size and shape (corresponding sides and angles are equal)
- 2 Translations, reflections, and rotations (rigid transformations)
- 3 5 (corresponding sides are equal)
- 4 No — it changes the size
- 5 Yes

**Day 33** Angle Relationships with Parallel Lines

- 1 Angles in the same position when a line crosses two parallel lines; they're equal
- 2 Angles on opposite sides of the transversal, between the parallel lines; they're equal
- 3  $70^\circ$
- 4 They are supplementary (sum to  $180^\circ$ )
- 5  $x = 20$

**Day 35** Mixed Review — Week 7

- 1  $80 (5 \times 4^2)$
- 2  $110^\circ$
- 3  $x = 2$
- 4 41
- 5  $4 \times 10^3$

**Day 32** Similar Figures & Scale Factor Review

- 1 They have the same shape but possibly different sizes (proportional sides, equal angles)
- 2 12
- 3 The areas have a ratio of  $k^2$
- 4  $20 (80 \times (1/2)^2)$
- 5 Equal

**Day 34** Angle Sum & Exterior Angle Theorems

- 1  $180^\circ$
- 2  $360^\circ$
- 3 The two non-adjacent (remote) interior angles
- 4  $120^\circ$
- 5  $540^\circ$

**Day 36** Volume of Cylinders

- 1  $V = \pi r^2 h$
- 2  $\approx 197.82$  cubic units
- 3  $\approx 785$  cubic units
- 4  $\approx 75.36$  cubic feet
- 5  $\approx 4$  units

**Day 37** Volume of Cones

- 1  $V = (1/3)\pi r^2 h$
- 2  $\approx 56.52$  cubic units
- 3 The cone's volume is  $1/3$  of the cylinder's volume
- 4  $\approx 150.72$  cubic units
- 5  $\approx 6$  units

**Day 38** Volume of Spheres

- 1  $V = (4/3)\pi r^3$
- 2  $\approx 113.04$  cubic units
- 3  $\approx 904.32$  cubic units
- 4  $\approx 7,234.56$  cubic cm
- 5  $(4/3)\pi$

**Day 39** Volume — Mixed Word Problems

- 1  $\approx 62.8$  cubic units
- 2  $\approx 25.12$  cubic units
- 3  $\approx 113.04$  cubic inches
- 4 Cylinder  $\approx 169.56$  + Cone  $\approx 56.52 = 226.08$  cubic units
- 5  $\approx 56.52$  cubic units

**Day 40** Mixed Review — Weeks 7–8

- 1  $\approx 125.6$  cubic units
- 2 10
- 3  $x = 5$
- 4  $\approx 150.72$  cubic units
- 5 17

**Day 41** Scatter Plots — Intro

- 1 The relationship between two numerical variables
- 2 As one variable increases, the other tends to increase too
- 3 As one variable increases, the other tends to decrease
- 4 There's no association between the variables
- 5 A point that doesn't fit the overall pattern of the data

**Day 42** Lines of Best Fit

- 1 To model the trend in scattered data for making predictions
- 2  $y = 25$
- 3 The rate of change between the two variables
- 4 The predicted value of  $y$  when  $x = 0$
- 5  $y$  decreases

**Day 43** Two-Way Tables

- 1 The relationship between two categorical variables
- 2  $18/30$  (or  $3/5$ )
- 3 A proportion or percentage of the total for a category
- 4 40%
- 5 Compare relative frequencies across rows/columns — if they differ significantly, there may be an association

**Day 45** Mixed Review — Week 9

- 1 Negative (downward sloping)
- 2  $x = 4$
- 3  $\approx 33.49$  cubic units
- 4  $y = 10$
- 5 25%

**Day 47** Comparing Functions

- 1 Function B (slope  $3 > 2$ )
- 2 Function A
- 3 Yes
- 4 4
- 5 The solution to the system formed by both functions

**Day 44** Interpreting Slope & Intercept in Context

- 1 The cost per hour (\$5/hour)
- 2 A flat fee or starting cost (\$20)
- 3 Speed of 60 units per time unit (e.g., 60 mph)
- 4 Height increases by about 2.5 units for each unit increase in age
- 5 The height at age 0 (e.g., birth height, approximately)

**Day 46** Linear vs. Nonlinear Functions

- 1 A straight line
- 2 Nonlinear
- 3 Linear
- 4 Linear
- 5 Nonlinear

**Day 48** Qualitative Graphs

- 1 The person stayed still/stopped for a time
- 2 The warmest part of the day (typically afternoon)
- 3 The rate of change (speed) decreased over time
- 4 It is constant — not changing
- 5 The bathtub being drained

**Day 49** Volume & Surface Area Word Problems II

- 1  $\approx 502.4$  cubic feet
- 2  $\approx 523.33$  cubic feet
- 3  $\approx 75.36$  cubic units
- 4 Radius  $\approx 2.83$  ( $r^2 \approx 8$ ,  $r \approx 2.83$ )
- 5  $\approx 134.04$  cubic units

**Day 51** Rational vs. Irrational Numbers

- 1 A number that can be written as a fraction of two integers
- 2 A number that cannot be written as a simple fraction (non-terminating, non-repeating decimal)
- 3 Rational ( $\sqrt{16} = 4$ )
- 4 Irrational
- 5 Irrational

**Day 53** Probability — Compound Events Review

- 1  $5/36$
- 2  $1/8$
- 3  $(4/10)(3/9) = 12/90 = 2/15$
- 4 12
- 5 0.20

**Day 50** Mixed Review — Week 10

- 1 Nonlinear
- 2  $\approx 3.14$  cubic units
- 3  $x = 5$
- 4 No movement (object is stationary)
- 5 10

**Day 52** Approximating Irrational Numbers

- 1 Between 4 and 5
- 2  $\approx 7$
- 3 1.4 ( $\sqrt{2} \approx 1.414$ )
- 4  $\sqrt{8}$  ( $\approx 2.83$ ), 3,  $\pi$  ( $\approx 3.14$ ), 3.5
- 5  $\approx 9.9$

**Day 54** Real-World Applications — Mixed

- 1  $c(x) = 0.05x + 30$ ;  $c(100) = \$35$
- 2 5 units
- 3 45 miles
- 4 40 and 10
- 5 26

**Day 55** Mixed Review — Week 11

- 1 Rational ( $= 1/3$ )
- 2  $\approx 5.5$  (between 5 and 6)
- 3  $x = 5$
- 4  $3/4$
- 5  $\approx 157$  cubic units

**Day 56** Comprehensive Review I

- 1  $x = 6$
- 2  $m = 2$
- 3  $x = 3, y = 5$
- 4  $x^4$
- 5 17

**Day 57** Comprehensive Review II

- 1  $4.2 \times 10^6$
- 2  $\approx 251.2$  cubic units
- 3  $x = 11$
- 4 Rational ( $= 6$ )
- 5 9

**Day 58** Comprehensive Review III

- 1  $\approx 113.04$  cubic units
- 2  $x = 5$
- 3 10
- 4  $y = (1/2)x - 4$
- 5  $8 \times 10^4$

**Day 59** Comprehensive Review IV

- 1  $x = 7, y = 4$
- 2 11
- 3 29
- 4  $\approx 263.76$  cubic units
- 5 Between 6 and 7

**Day 60** Day 60 — Ready for 8th Grade! 🎉

- 1  $x = 7$
- 2  $y = 3x + 1$
- 3  $\approx 942$  cubic units
- 4  $x = 5, y = 2$
- 5  $8x^6$