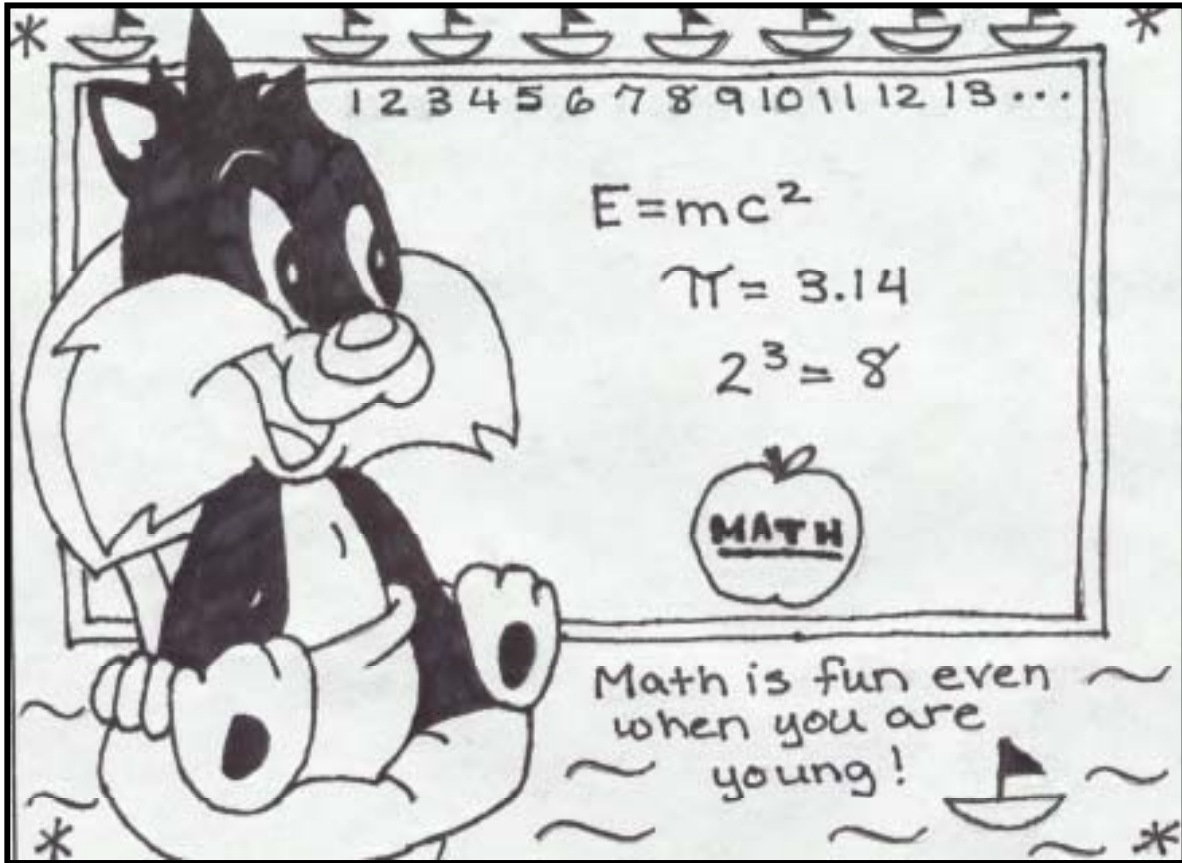


# ANSWER KEY

## Sail into Summer with Math!



## For Students Entering Honors Geometry

This summer math booklet was developed to provide students an opportunity to review grade level math objectives and to improve math performance.

## Geometry Summer Mathematics Packet Answer Key

### Answers to Squares, Square Roots, and Laws of Exp. [Pg. 1]

- |              |          |            |                     |                     |              |          |
|--------------|----------|------------|---------------------|---------------------|--------------|----------|
| 1. 16        | 2. -108  | 3. 125     | 4. 3                | 5. 75               | 6. 4         | 7. $5^6$ |
| 8. $12^{12}$ | 9. $5^5$ | 10. $10^8$ | 11. $\frac{1}{7^3}$ | 12. $\frac{1}{3^4}$ | 13. $3^{15}$ | 14. 1    |

### Answers to Simplifying Radicals [Pg. 2]

- |                          |                |  |                   |                |
|--------------------------|----------------|--|-------------------|----------------|
| 1. $\frac{\sqrt{15}}{9}$ | 2. $7\sqrt{6}$ | 3. $14\sqrt{3}$                                | 4. $4+2\sqrt{10}$ | 5. $3\sqrt{7}$ |
| 6. $\frac{3\sqrt{3}}{7}$ | 7. 0           | 8. $12\sqrt{6}$                                | 9. $6\sqrt{2}$    | 10. 75         |
| 11. $13\sqrt{2}$         | 12. 45         | 13. Nina - can demonstrate through calculator. |                   |                |

### Answers to Solving Equations I [Pg. 3]

- |              |                         |                        |               |                |
|--------------|-------------------------|------------------------|---------------|----------------|
| 1. $t = -32$ | 2. $m = 10$             | 3. $r = 3.7$           | 4. $x = -39$  | 5. $g = -1.5$  |
| 6. $y = -24$ | 7. $x = 60$             | 8. $t = 28\frac{2}{3}$ | 9. $t = -384$ | 10. $t = -7.5$ |
| 11. $r = 19$ | 12. $x = 11\frac{1}{3}$ |                        |               |                |
13. A paragraph that describes how to solve any two step equation is the expectation.

### Answers to Solving Equations II [Pg. 4]

- |              |                        |                       |                |
|--------------|------------------------|-----------------------|----------------|
| 1. $r = 23$  | 2. $t = 11$            | 3. $x = 1\frac{1}{3}$ | 4. No Solution |
| 5. $x = 1.4$ | 6. $p = 1\frac{3}{13}$ | 7. D                  |                |

8. Option One is  $40 \cdot 12 = \$480$ , while Option Two is  $400 + (400)(0.15)(1) = \$460$ . Option Two would cost Ted less money.

### Answers to Inequalities [Pg. 5]

- $x > 2\frac{1}{4}$  : number line should have open circle at  $2\frac{1}{4}$  and extend to the right (positive values)
- $t \leq 3$  : number line should have closed circle at 3 and line extends to the left (into negative values)
- $x \geq 6$  : number line should have a closed circle at 6 and extend to the right.
- $x < -8$  : number line should have an open circle at  $-8$  and extend to the left

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**Answers to Pythagorean Theorem [Pg. 6]**

- |              |                  |                   |                |
|--------------|------------------|-------------------|----------------|
| 1. $x = 4$ m | 2. About 5.66 ft | 3. $x = 15$ cm    | 4. $x = 13$ ft |
| 5. 25 in     | 6. About 14.14 m | 7. About 47.37 ft |                |

**Answers to Irregular Areas [Pg. 7]**

- |                       |                    |                |               |
|-----------------------|--------------------|----------------|---------------|
| 1. 23 square inches   |                    |                |               |
| 2. a. 353.04 square m | b. 45.76 square ft | c. 92 square m | d. 9.12 sq cm |

**Answers to Volume and Surface Area [Pg. 8]**

- |   |  |
|---|--|
| 1. $V = 384$ m <sup>3</sup> , SA = 352 m <sup>2</sup>     | 2. $V = 1356.48$ ft <sup>3</sup> , SA = 678.24 ft <sup>2</sup> |
| 3. $V = 2000$ in <sup>3</sup> , SA = 1000 in <sup>2</sup> | 4. $V = 576$ ft <sup>3</sup> , SA = 532 ft <sup>2</sup>        |

**Answers to Venn Diagrams [Pg. 9]**

- |                        |                               |                      |
|------------------------|-------------------------------|----------------------|
| 1. 8 people            | 2. 2 fans cheered for neither |                      |
| 3. a. 18 sixth graders | b. 143 sixth graders          | c. 144 sixth graders |

**Answers to Constructions I [Pg. 10]**

Check drawings on child's paper to see if objective was met (copied or bisected)

**Answers to Constructions II [Pg. 11]**

Check drawings on child's paper to see if objective was met  
(copied, perpendicular, or bisected)

**Answers to Angle Relationships [Pg. 12]**

- |         |        |         |          |         |          |
|---------|--------|---------|----------|---------|----------|
| 1. 54°  | 2. 80° | 3. 46°  | 4. 54°   | 5. 80°  | 6. 46°   |
| 7. 126° | 8. 54° | 9. 126° | 10. 134° | 11. 46° | 12. 134° |

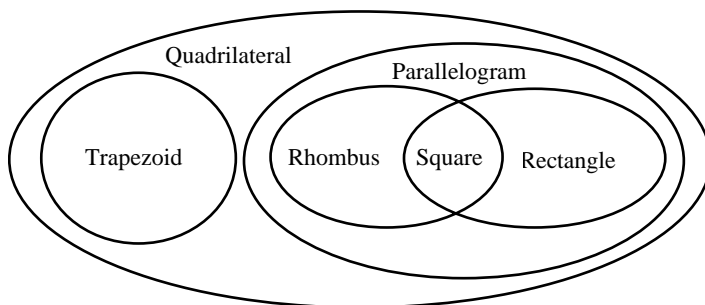
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**Problems Involving Shapes [Pg. 13]**

1. 105 degrees
2. 120 degrees, 135 degrees
3. 5 diagonals, 20 diagonals, 35 diagonals
4. a. 54 degrees                      b. 58 degrees                      c. 132 degrees                      d. 65 degrees

**Answers to Properties of Polygons [Pg. 14]**

1. Parallelogram
2. Trapezoid
3. Rhombus or Square
4. Rectangle or Square
5. Square
6. Quadrilateral
7. Parallelogram
- 8.



**Answers to Circles [Pg. 15]**

1.  $C = 22.608$  m,  $A = 40.6944$  sq m
2.  $C = 40.192$  ft,  $A = 128.6144$  sq ft
3.  $C = 15.7$  m,  $A = 19.625$  sq m
4.  $C = 47.1$  cm,  $A = 176.625$  sq cm

**Answers to Similarity [Pg. 16]**

1. No, because  $\frac{5}{7}$  does not equal  $\frac{7}{9}$
2. About 11 feet.

**Answers to Distance and Midpoint Formulas [Pg. 17]**

1. a. 14                      b.  $\sqrt{89} \approx 9.43$                       c.  $\sqrt{68} \approx 8.25$                       d.  $\sqrt{185} \approx 13.6$
2. a. (-1, 7)                      b. (-0.5, -2)                      c. (-2, -5)                      d. (4, 0.5)

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**Answers to Factoring Quadratic Equations [Pg. 18]**

- |                                     |                                   |                          |
|-------------------------------------|-----------------------------------|--------------------------|
| 1. $a = -6$ or $a = 5$              | 2. $b = -4$ or $b = -3$           | 3. $m = 4$ or $m = 10$   |
| 4. $s = -15$ or $s = 12$            | 5. $a = -3$ or $a = -\frac{1}{7}$ | 6. $x = -1.5$ or $x = 4$ |
| 7. $n = -2.5$ or $n = 3.5$          | 8. $y = 4$ or $y = 9$             |                          |
| 9. $m = -2.5$ or $m = -\frac{2}{3}$ | 10. $x = -3$ or $x = 5$           |                          |
| 11. $x = -1.5$ or $x = 1$           | 12. $x = -\frac{2}{3}$ or $x = 2$ |                          |

**Answers to Solving Systems of Equations [Pg. 19]**

- |   |            |            |             |
|---|------------|------------|-------------|
| 1. (5, 3)   | 2. (-1, 7) | 3. (6, -1) | 4. (-5, -1) |
| 5. \$12.00 for each CD and \$8.00 for each cassette |            |            |             |
| 6. There will be 5 essay questions on the test.     |            |            |             |

**Answers to Probability [Pg. 20]**

- |                      |                   |                   |                   |                   |                   |
|----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 1. 1 out of 12       | 2. 1 out of 20    |                   |                   |                   |                   |
| 3. a. $\frac{1}{11}$ | b. $\frac{1}{11}$ | c. $\frac{2}{11}$ | d. $\frac{1}{11}$ | e. $\frac{2}{11}$ | f. $\frac{1}{11}$ |
| 4. a. $\frac{1}{26}$ | b. $\frac{1}{2}$  | c. $\frac{1}{52}$ | d. $\frac{4}{13}$ |                   |                   |