

## Thinkwell's Placement Test 2 Answer Key

If you answered 7 or more Test 2 questions correctly, we recommend Thinkwell's Homeschool 7<sup>th</sup> Grade Math. If you answered fewer than 7 questions correctly, we recommend Thinkwell's Homeschool 6<sup>th</sup> Grade Math.

1. **Answer:**  $z = 10.99$

Explanation

Solve the equation by adding 4.88 to each side of the equation.

$$\begin{array}{r} 6.11 = z - 4.88 \\ + 4.88 \quad + 4.88 \quad \text{Add 4.88 to each side.} \\ \hline 10.99 = z \quad \text{Add 6.11 and 4.88.} \end{array}$$

This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Solving Decimal Equations."

2. **Answer:**  $\frac{1}{8}$

Explanation

Subtract  $\frac{3}{8}$  from  $\frac{1}{2}$  to find the portion of the glass that is full.

$$\begin{array}{r} \frac{1}{2} - \frac{3}{8} = \frac{1 \cdot 4}{2 \cdot 4} - \frac{3}{8} \quad \text{The common denominator is 8,} \\ \quad \quad \quad \text{so multiply } 1 / 2 \text{ by } 2 / 2. \\ = \frac{4}{8} - \frac{3}{8} \quad \text{Simplify.} \\ = \frac{4 - 3}{8} \quad \text{Subtract the numerators.} \\ = \frac{1}{8} \quad \text{Simplify the numerator.} \end{array}$$

This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Adding and Subtracting with Unlike Denominators."

3. **Answer:**  $2\frac{1}{3}$

Explanation

Write the whole number over 1 and then multiply the numerators and multiply the denominators.

$$\begin{array}{r} 3 \cdot \frac{7}{9} = \frac{3}{1} \cdot \frac{7}{9} \quad \text{Write the whole number over 1.} \\ = \frac{3 \cdot 7}{1 \cdot 9} \quad \text{Multiply numerators and} \\ \quad \quad \quad \text{multiply denominators.} \\ = \frac{21}{9} \quad \text{Simplify.} \\ = \frac{7}{3} \quad \text{Simplify and remove the common factor 3} \\ \quad \quad \quad \text{from the numerator and denominator.} \\ = 2\frac{1}{3} \quad \text{Write the improper fraction} \\ \quad \quad \quad \text{as a mixed number.} \end{array}$$

This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Multiplying Fractions by Whole Numbers."

4. **Answer:  $n = 25$**

Explanation

Cross multiply to find the missing value.

$$\frac{5}{8} = \frac{n}{40}$$

$$5(40) = 8n \quad \text{Cross multiply.}$$

$$200 = 8n \quad \text{Multiply.}$$

$$n = 25 \quad \text{Divide each side by 8.}$$

*This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Proportions."*

5. **Answer: \$17.12**

Explanation

Find the amount of tax on \$16 when the tax rate is 7% by multiplying \$16 by 7%. Remember to convert the percent to a decimal by moving the decimal point two places to the left.

$$16(7\%) = 16(0.07) = 1.12$$

So the tax is \$1.12. Now add the tax to the price of the doll.

$$\$16 + \$1.12 = \$17.12$$

*This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Using Percents."*

6. **Answer: 3,200,000 liters**

Explanation

Multiply 3200 kiloliters by the conversion factor  $\frac{1000 \text{ L}}{1 \text{ kL}}$ .

Notice that the units "kiloliters" are in the denominator of the conversion factor. Therefore, "kiloliters" will cancel and "liters" will be the units of the product.

$$3200 \text{ kL} \cdot \frac{1000 \text{ L}}{1 \text{ kL}} = \frac{3200 \cancel{\text{ kL}} (1000 \text{ L})}{1 \cancel{\text{ kL}}} = \frac{3200000}{1} \text{ L} = 3,200,000 \text{ L}$$

*This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Converting Metric Units."*

7. **Answer: 84 in**

Explanation

Use the formula for the perimeter of a rectangle,  $P = 2\ell + 2w$ .

$$P = 2(24) + 2(18) = 48 + 36 = 84$$

*This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Perimeter."*

8. **Answer: 45 m<sup>2</sup>**

Explanation

Use the formula for the area of a triangle,  $A = \frac{1}{2}bh$ .

$$A = \frac{1}{2}(10)(9) = 45$$

*This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Area of Triangles and Trapezoids."*

9. **Answer: -40**

Explanation

Substitute 10 into the expression for  $v$  and simplify.  $-4(10) = -40$

*This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Multiplying Integers."*

10. **Answer:  $y = 5x - 1$ ; 54**

Explanation

The  $(x, y)$  pairs given in the table show a pattern of 5 times the  $x$ -value minus 1 gives the  $y$ -value.

$$5(3) - 1 = 15 - 1 = 14$$

$$5(5) - 1 = 25 - 1 = 24$$

$$5(7) - 1 = 35 - 1 = 34$$

$$5(9) - 1 = 45 - 1 = 44$$

So, the equation is  $y = 5x - 1$ . Substitute 11 into the equation to find the corresponding  $y$ -value.

$$5(11) - 1 = 55 - 1 = 54$$

*This concept is covered in Thinkwell's 6<sup>th</sup> Grade Math topic "Tables and Functions."*

### Guidelines for Interpreting Placement Test Scores

Placement Test	Number of Correct Answers	Recommendation
Placement Test 1	5 or more	<a href="#">Thinkwell's 6<sup>th</sup> Grade Math</a>
Placement Test 2	6 or less	<a href="#">Thinkwell's 6<sup>th</sup> Grade Math</a>
	7 or more	<a href="#">Thinkwell's 7<sup>th</sup> Grade Math</a>
Placement Test 3	4 or less	<i>complete Placement Test 2</i>
	5 or 6	<a href="#">Thinkwell's 7<sup>th</sup> Grade Math</a>
	7 or more	<a href="#">Thinkwell's 8<sup>th</sup> Grade Math</a>
Placement Test 4	4 or less	<i>complete Placement Test 3</i>
	5 or 6	<a href="#">Thinkwell's 8<sup>th</sup> Grade Math</a>
	7 or more	<a href="#">Thinkwell's Intermediate Algebra (Algebra 1)</a>
Placement Test 5	4 or less	<i>complete Placement Test 4</i>
	5 or 6	<a href="#">Thinkwell's Intermediate Algebra (Algebra 1)</a>
	7 or more	<a href="#">Thinkwell's College Algebra (Algebra 2)</a>
Placement Test 6	4 or less	<i>complete Placement Test 5</i>
	5 or 6	<a href="#">Thinkwell's College Algebra (Algebra 2)</a>
	7 or more	<a href="#">Thinkwell's Precalculus</a>
Placement Test 7	4 or less	<i>complete Placement Test 6</i>
	5 or 6	<a href="#">Thinkwell's Precalculus</a>
	7 or more	<a href="#">Thinkwell's Calculus</a>