IU-IMI Assessments
on
Indiana Academic Standards
for Grade 5 Mathematics

1. These tests have been generated from problems in the Classroom Assessments on the Indiana Academic Standards Resources CD. (See also [http://www.indianastandardsresources.org/](http://www.indianastandardsresources.org/)) When no problems were already written, the sample items in the Indiana Academic Standards for Mathematics – Teacher’s Edition were used. A few problems were created when neither resource was sufficient.

2. The test may be photocopied back to back with two problems on each standard. You may also run only the fronts (1A, 2A, …) to have one problem for each standard, or only the backs (1B, 2B, …). That way you have two very similar tests that may be used for pre- and post-test.

3. There are approximately ten standards on each test, even though the test may cover more (or less) than one Everyday Math unit. This is to keep it approximately the same length as an ISTEP+ Applied Skills test.

4. In the Teacher’s Answer Key for the IU-IMI Assessments, answers are shown as they exist in the Academic Resources, and each standard is identified.

5. Any standards that are taught throughout the book and have no specific Everyday Math lesson assigned to them are also tested in the last Unit test.

6. The final test for each grade contains the questions in the Problem Solving section of the Academic Resources. All or any of it may be used at any time appropriate during the school year.

7. There is a blank page that prints behind each Unit Test cover sheet (except after Test One) to allow for correct duplication of the entire document. You may have to insert other blank pages if you photocopy the document as pretest and posttest.

For questions or comments, contact Donna McLeish at mcleishhm@aol.com.

This material was compiled by Donna McLeish of the Indiana University-Indiana Mathematics Initiative Math Science Partnership and funded by the National Science Foundation under grant #0227269. See the Indiana Mathematics Initiative Web Site at [http://www.indiana.edu/~iucme/elementary/resources](http://www.indiana.edu/~iucme/elementary/resources) for related documents and updates. You can also find information on how to order a CD containing these documents.
Grade 5

Test One

Indiana Academic Standards
Everyday Math Units 1-2
Part IA  Show your work.

1. Write the number 1,949,001.045 in words.

2. Write one million, two hundred three thousand, one hundred forty-two, and six hundredths in figures.

For Questions 3 through 6, round 2,345,709.36 to the:

3. nearest thousand ____________________ 4. nearest ten ____________________

5. nearest hundred ____________________ 6. nearest tenth ____________________

For Questions 7 through 10, compare each pair of numbers using <, =, or >.

7. 543,749 _____ 543,739 8. 980,890 _____ 980,990

9. 793,579 _____ 793,579 10. 4,973.4 _____ 4,973.045

For Questions 11 through 14, identify the numbers as prime or composite. Write the correct term in the blank following the number.

11. 15 ____________________ 12. 17 ____________________

13. 49 ____________________ 14. 18 ____________________
Part IB  Show your work.

1. Write the number 2,160,531.52 in words.

2. Write one million, four hundred twenty-two thousand, nine hundred thirteen, and twenty-four hundredths in figures.

For Questions 3 through 6, round 315,239.49 to the:

3. nearest thousand _______________

4. nearest ten _______________

5. nearest hundred _______________

6. nearest tenth _______________

For Questions 7 through 10, compare each pair of numbers using <, =, or >.

7. 135,184 _____ 135,146

8. 145,212 _____ 145,212

9. 432,112 _____ 435,242

10. 31,559.2 _____ 31,539.2

For Questions 11 through 14, identify the numbers as prime or composite. Write the correct term in the blank following the number.

11. 11 _______________

12. 34 _______________

13. 47 _______________

14. 21 _______________
Part IIA  Show your work.

1. $2,769 \times 34$

2. $3,004 \times 346$

3. $798 \div 34$

4. $3,478 \div 362$

Use the following information to answer Questions 5 and 6.

Tyler had a $20.00 bill. He bought an action figure for $4.98 and a baseball for $7.49. The cashier gave him $10.47 in change.

5. Describe how you would estimate the amount of change Tyler received.

6. Use estimation to decide whether Tyler received the correct amount of change.

7. Emily bought 15 bags of fruit chews that had 24 pieces in each bag. She wanted to give each of her 8 friends the same amount of fruit chews. How many fruit chews will each friend receive?
Part IIB  Show your work.

1. 2,309  
   \[ \times 22 \]  

2. 4,280  
   \[ \times 315 \]  

3. 755 \div 31  

4. 4,403 \div 126  

Use the following information to answer Questions 5 and 6.

Juanita’s mother gave her a $20.00 bill to go to the grocery store. She bought a magazine for $4.95 and some food for $8.13. The cashier gave her $5.57 in change.

5. Describe how you would estimate the amount of change Juanita received.

   ____________________________________________________________

   ____________________________________________________________

6. Use estimation to decide whether Juanita received the correct amount of change.

7. Shane bought 13 packages of cookies for a party at school. Each package contained 24 cookies. He wants to give each of the 6 Grade 5 classrooms the same number of cookies. How many cookies will each classroom receive?
Part IIA  Show your work.

8.  $345.8 + 35.006$  
9.  $129.57 + 3.4$

10.  $789.006 - 234.8$  
11.  $31.2 - 19.61$
Part IIB  Show your work.

8.  605.3 + 14.575  
9.  157.98 + 5.7  

10. 418.702 − 156.13  
11. 64.3 − 22.76
Grade 5

Test Two

Indiana Academic Standards

Everyday Math Unit 2
1A

When 3 is added to an unknown number, the result is 21. Let \( x \) represent the unknown number and write an equation for the relationship.

2A

Jerry plans to have friends stay over night and wants to rent a movie and buy pizza and pop for five friends. Jerry’s parents set a spending limit of $25. Renting a movie costs $3.75. One pizza costs $8.95. A large bottle of pop costs $1.99. Jerry estimates he will need two pizzas and two bottles of pop. Will he be able to stay within the spending limit? Explain your answer.
1B

When 17 is subtracted from an unknown number, the resulting number is 23.
Let $x$ represent the unknown number and write an equation for the relationship.

2B

Peggy plans to have friends stay over night and wants to rent a movie and buy pizza and pop for three friends. Her parents set a spending limit of $25. Renting a movie costs $3.75. One pizza costs $10.95. A large bottle of pop costs $1.99. Peggy estimates she will need one pizza and two bottles of pop. Will she be able to stay within the spending limit? Explain your answer.
Below are spelling test scores for Mrs. Sandfield’s Grade 5 class. Use this information to answer questions 3A through 6A.

<table>
<thead>
<tr>
<th>Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juan</td>
<td>8</td>
</tr>
<tr>
<td>Trent</td>
<td>8</td>
</tr>
<tr>
<td>Emily</td>
<td>9</td>
</tr>
<tr>
<td>Cameron</td>
<td>9</td>
</tr>
<tr>
<td>Kendra</td>
<td>10</td>
</tr>
<tr>
<td>Andre</td>
<td>9</td>
</tr>
<tr>
<td>Thomas</td>
<td>8</td>
</tr>
<tr>
<td>Melissa</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chandra</td>
<td>8</td>
</tr>
<tr>
<td>Tyler</td>
<td>10</td>
</tr>
<tr>
<td>Ken</td>
<td>8</td>
</tr>
<tr>
<td>Ben</td>
<td>7</td>
</tr>
<tr>
<td>Tamika</td>
<td>10</td>
</tr>
<tr>
<td>Susan</td>
<td>8</td>
</tr>
<tr>
<td>Cindy</td>
<td>9</td>
</tr>
</tbody>
</table>

3A
What is the median score for the class? ___________________

4A
What is the mode of the class’ scores? ___________________

5A
What is the mean score for the class? ___________________

6A
What is the range of the class’ scores? _________________

7A
A probability is named with a number from ____ to ____. If an event is certain to happen, it has a probability of ____.
Below are spelling test scores for Mrs. Sandfield’s Grade 5 class. Use this information to answer questions 3B through 6B.

<table>
<thead>
<tr>
<th>Name</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>Dominique</td>
<td>8</td>
</tr>
<tr>
<td>Anthony</td>
<td>9</td>
</tr>
<tr>
<td>Sarah</td>
<td>7</td>
</tr>
<tr>
<td>Cameron</td>
<td>5</td>
</tr>
<tr>
<td>Jamal</td>
<td>10</td>
</tr>
<tr>
<td>Kara</td>
<td>9</td>
</tr>
<tr>
<td>John</td>
<td>6</td>
</tr>
<tr>
<td>Eric</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jill</td>
<td>9</td>
</tr>
<tr>
<td>Pablo</td>
<td>9</td>
</tr>
<tr>
<td>Eric</td>
<td>7</td>
</tr>
<tr>
<td>Amanda</td>
<td>6</td>
</tr>
<tr>
<td>Kiesha</td>
<td>10</td>
</tr>
<tr>
<td>Jorge</td>
<td>7</td>
</tr>
<tr>
<td>Maria</td>
<td>9</td>
</tr>
</tbody>
</table>

3B
What is the median score for the class? ________________

4B
What is the mode of the class’ scores? ________________

5B
What is the mean score for the class? ________________

6B
What is the range of the class’ scores? ________________

7B
A probability is named with a number from ____ to ____. If an event is certain not to happen, it has a probability of ____.
8A

Find the probability of rolling the number 2 on a standard 6-sided number cube.

9A

Find the probability of a coin landing heads up.

10A

Find the probability that a cube with 2 green sides and 4 red sides will land with a blue side up.

11A

Find the probability of landing on the number six on a spinner that has 24 equal spaces numbered from 1 to 24.
8B

Find the probability of a coin landing heads up.

9B

Find the probability of landing on the number 2 on a spinner that has equal spaces numbered 1 through 5.

10B

Find the probability of rolling a number 8 on a standard 6-sided cube.

11B

Find the probability that a cube with 1 blue side and 5 orange sides will land with an orange side up.
Grade 5

Test Three

Indiana Academic Standards
Everyday Math Unit 3
1. Circle the pair of lines that look parallel.

2. Using a protractor, find the measure of each angle in the triangle below.

\[ \angle A = \____ \]
\[ \angle B = \____ \]
\[ \angle C = \____ \]

3. Use a ruler and a protractor to draw an equilateral triangle in the space below.

4. Define scalene triangle.

__________________________________________________________________________
B

1. Circle the pair of lines that look perpendicular.

2. Using a protractor, measure and label each of the angles in the triangle below.

\[ \angle A = \underline{\hspace{2cm}} \]

\[ \angle B = \underline{\hspace{2cm}} \]

\[ \angle C = \underline{\hspace{2cm}} \]

3. Use a ruler and a protractor to draw a scalene triangle in the space below.

4. Define equilateral triangle.
5. Use a ruler and a protractor to draw an obtuse triangle in the space below.

6. Define isosceles triangle.

7. Put an X on each of the congruent triangles. Explain your choice.

In Questions 8 through 11, match the names with the correct shape.

<table>
<thead>
<tr>
<th>Name</th>
<th>Shape</th>
</tr>
</thead>
<tbody>
<tr>
<td>pentagon</td>
<td></td>
</tr>
<tr>
<td>hexagon</td>
<td></td>
</tr>
<tr>
<td>trapezoid</td>
<td></td>
</tr>
<tr>
<td>octagon</td>
<td></td>
</tr>
</tbody>
</table>

8. ____________  9. ____________

10. ____________ 11. ____________
5. Use a ruler and a protractor to draw an isosceles triangle in the space below.

6. Define acute triangle.

7. Put an X on each of the congruent triangles. Explain your choice.

In Questions 8 through 11, match the names with the correct shape.

rhombus  pentagon  trapezoid  octagon

8. ________________

9. ________________

10. ________________

11. ________________
12A

Use a compass to draw a circle that has a radius of 3 centimeters.

13A

What is the diameter of the circle you drew?

14A

A circle has a diameter of 25 meters. What is its radius?
12B

Use a compass to draw a circle that has a radius of 2 centimeters.

13B

What is the diameter of the circle you drew?

14B

A circle has a diameter of 17 meters. What is its radius?
Grade 5

Test Four

Indiana Academic Standards
Everyday Math Units 4-5
1. On the 10 × 10 grid below, shade in an area that represents 45%.

2. What fraction of the whole does this shaded part represent?

3. What fraction of a graham cracker will each person get when 5 graham crackers are divided equally among 8 people?

4. In a classroom of 28, there are 12 boys and 16 girls. What fraction of the class is boys? Write your answer in lowest terms.
1. On the $10 \times 10$ grid below, shade in an area that represents 65%.

2. What fraction of the whole does this shaded part represent?

3. What fraction of a cake will each person get when 7 cakes are divided equally among 12 people?

4. The swimming team has 49 members. There are 21 boys and 28 girls. What fraction of the team is girls? Write your answer in lowest terms.
A

For Questions 5 through 8 use the number line below. Write in the blank the letter that best corresponds with the position of the number on the number line.

5. $1\frac{7}{10}$ ___  
6. $1.3$ ___  
7. $0.5$ ___  
8. $0.8$ ___

0  A  B  1  C  D  2

9

Freezing Point of Water  _______°F  _______°C

Boiling Point of Water  _______°F  _______°C

10

"This water should be boiling, but it isn’t!" Katy said. The kitchen thermometer read 160°. Was the thermometer likely in Fahrenheit units, Celsius units, or is it impossible to tell?

Explain your answer: ____________________________________________________________
B

For Questions 5 through 8 use the number line below. Write in the blank the letter that best corresponds with the position of the number on the number line.

5. $1\frac{9}{10}$  6. $\frac{1}{4}$  7. 0.9  8. 1.5

0  A  B 1  C  D  2

9

Freezing Point of Water  _____°F  _____°C

Boiling Point of Water  _____°F  _____°C

10

Ms. Goldstein told her class to put on their jackets before recess because it was only 30° outside. Was Ms. Goldstein giving the temperature in Fahrenheit units, Celsius units, or could it have been either unit?

Explain your answer: ________________________________
Grade 5

Test Five

Indiana Academic Standards
Everyday Math Units 6-8
1. What type of graph would you use to display this data? Explain why.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Show your work:

2A \[ 3 \frac{5}{6} + 4 \frac{1}{4} = \]

3A \[ 6 \frac{1}{2} + 5 \frac{1}{3} = \]
1. What type of graph would you use to display this data? Explain why.


Show your work:

2B  $4 \frac{5}{8} + 3 \frac{1}{6} =$

3B  $2 \frac{1}{4} + 8 \frac{2}{3} =$
Show your work:

4A \[4 \frac{2}{5} - 2 \frac{3}{7} = \]

5A \[9 \frac{3}{8} - 1 \frac{5}{7} = \]

6A

Trent had 2 \(\frac{1}{2}\) pizzas. He wanted to share equally with each of his 3 brothers. What part of 2 \(\frac{1}{2}\) pizzas is an equal share for 4 people?

Show your work.

Answer: ___________ pizzas
Show your work:

4B  \( 7 \frac{6}{7} - 6 \frac{3}{4} = \)

5B  \( 5 \frac{1}{2} - 3 \frac{4}{5} = \)

6B

Ramon was invited to a special pizza party at school. There was extra pizza so he was allowed to take 4 ½ pizzas home. He wanted to share the pizzas equally with three friends. What part of 4 ½ pizzas is an equal share for 4 people?

Show your work.

Answer: _______ pizzas
7A
Jane had a candy bar that was divided into 12 pieces. She gave her brother, Stan, \( \frac{2}{3} \) of it. Stan gave \( \frac{1}{4} \) of his piece to his friend, Joe. What fraction of the original candy bar did Joe have?

Draw pictures to show your answer. Write a number sentence for the question.

Number sentence _______________________________

8A
How many \( \frac{1}{4} \) - hour episodes of a cartoon could you watch in \( \frac{1}{2} \) hour?

Draw pictures to show your answer. Write a number sentence for the question.

Number sentence _______________________________
7B
Susie is going to make cookies for her friend. The recipe calls for \( \frac{3}{4} \) cups of sugar. Susie wants to use just \( \frac{1}{2} \) of the sugar called for in the recipe. How much sugar will she use?

Draw pictures to show your answer. Write a number sentence for the question.

Number sentence _______________________________

8B
Janice is making cookies. The recipe calls for \( \frac{2}{3} \) cups of sugar. She has only \( \frac{1}{6} \)-cup measuring cups. How many \( \frac{1}{6} \) cups are there in \( \frac{2}{3} \)?

Draw pictures to show your answer. Write a number sentence for the question.

Number sentence _______________________________
Grade 5

Test Six

Indiana Academic Standards

Everyday Math Unit 9
1A

On the grid below, plot the ordered pairs: (0,5) (2,4) (4,6) (4,8).

2A

Circle the shapes that have rotational symmetry.
1B

On the grid below, plot the ordered pairs: (7,0) (5,3) (8,6) (10,3).

2B

Circle the shapes that have rotational symmetry.

![Shapes]
3A

Decide which of these shapes have reflectional symmetry. Draw a line of symmetry through those shapes.

![Shapes](image)

4A

Use the appropriate formula to find the area of the rectangle below. Show your work and write your answer using the correct units.

![Rectangle](image)

Answer: ______________________
3B

Decide which of these shapes have reflectional symmetry. Draw a line of symmetry through those shapes.

B F W

4B

Use the appropriate formula to find the area of the rectangle below. Show your work and write your answer using the correct units.

4 m

6 m

Answer: ____________________
5A

Use the appropriate formula to find the area of the triangle below. Show your work and write your answer using the correct units.

Answer: _______________

6A

Use the appropriate formula to find the area of the trapezoid below. Show your work and write your answer using the correct units.

Answer: _______________
5B

Use the appropriate formula to find the area of the triangle below. Show your work and write your answer using the correct units.

Answer: _________________________

6B

Use the appropriate formula to find the area of the trapezoid below. Show your work and write your answer using the correct units.

Answer: _________________________
7A

Pablo is covering a rectangular board for a science display. The width of the rectangle is yards and the length is 3 yards. How much material will he need to cover the front of the board?
Show your work. Write your answer using the correct units.

Answer: _____________________

8A

Jackie wants to put a border around the edge of a rectangular display board that has a width of 4 yards and a height of 3 yards. What length of border material will she need?
Show your work. Write your answer using the correct units.

Answer: _____________________
7B

Kathleen is covering a rectangular bulletin board in her classroom for a display. The width of the bulletin board is 5 feet and the length is 4 feet. How much material will she need to cover the front of the board? Show your work. Write your answer using the correct units.

Answer: ___________________

8B

Richard wants to put a border around the edge of the rectangular bulletin board that has a base of 5 feet and a height of 4 feet. What length of border material will he need? Show your work. Write your answer using the correct units.

Answer: ______________
Kiesha wants to paint one wall of her bedroom. Below is a diagram of the wall she wants to paint. The door is 3 feet by 7 feet. The window is 3 feet by 4 feet. Kiesha does not want to paint the door or the window. Find the area of the wall to be painted. Show your work and write your answer using the correct units.

Answer: _____________________
Andre is going to help his father put new carpeting in one of the rooms in their house. Below is a diagram of the room they want to carpet. No carpet is needed for the step or fireplace. The step is 2 feet by 6 feet. The tiled area in front of the fireplace is 3 feet by 6 feet. Find the area of the floor to be carpeted. Show your work and write your answer using the correct units.

Answer: _____________________
Grade 5

Test Seven

Indiana Academic Standards
Everyday Math Unit 10
In questions 1A through 4A, evaluate the expressions when the value of \( x = 5 \). Circle your answer.

1A \( 6x + 15 = \)

2A \( (35 - x) \times 3 = \)

3A \( (3 + x) \times 4 = \)

4A \( 37 - 3x = \)

5A

Rewrite the following expression without the parentheses: \( 7(35 + 12) \). Do not perform any computations.

6A

The distance (\( d \)) a car travels in \( h \) hours when traveling 45 miles per hour is given by the formula: \( d = 45h \). Find the distance traveled in 3 hours. Show your work.

Answer: \( \) miles
In questions 1B through 4B, evaluate the expressions when the value of $x = 4$. Circle your answer.

1B \[ 7x + 9 = \]

2B \[ (7 - x) \times 5 = \]

3B \[ (6 + x) \times 3 = \]

4B \[ 93 - 5x = \]

5B

Rewrite the following expression without the parentheses: \[ 9(16 + 27). \] Do not perform any computations.

6B

The distance \((d)\) a car travels in \(h\) hours when traveling 65 miles per hour is given by the formula: \[ d = 65h. \] Find the distance traveled in 5 hours. Show your work.

Answer: __________ miles
For $x = 1, 2, \text{ and } 3,$ find the points that fit the equation $y = 2x - 2$. Plot the points on the grid above. Draw the line they determine.

<table>
<thead>
<tr>
<th>$x$</th>
<th>$y$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
For \( x = 1, 2, \) and \( 3, \) find the points that fit the equation \( y = 3x - 1. \) Plot the points on the grid above. Draw the line they determine.

\[
\begin{array}{c|c}
 x & y \\
\hline
1 & \ \\
2 & \ \\
3 & \\
\end{array}
\]
Josette joins CD ClubHouse. The graph above shows the number of CDs Josette will receive given the number of friends who join the club. Using the graph, answer these questions:

a) How many CDs would Josette receive if four friends join? ________

b) Plot the point that shows where you found your answer.

c) Identify what $x$ and $y$ represent based on the graph.
   $x =$ __________________________
   $y =$ __________________________

d) The linear equation that represents this situation is $y = x + 3$. Check your answer by using substitution in the linear equation.
Jacob is painting houses for the summer. He paints the trim in an entire house plus the walls in each room. The graph above shows how many buckets of paint he needs based on the number of rooms in the house. Using the graph, answer these questions:

a) How many buckets of paint will Jacob need if a house has 6 rooms? 

b) Plot the point that shows where you found your answer.

c) Identify what $x$ and $y$ represent based on the graph.
   $x =$ ________________________________
   $y =$ ________________________________

d) The linear equation that represents this situation is $y = \frac{1}{2} x + 1$. Check your answer by using substitution in the linear equation.
Grade 5

Test Eight

Indiana Academic Standards
Everyday Math Unit 11
1A

Plot the points (6,3) and (6,10) on the grid.
Find the distance between the two points. Show your work.

Answer: _______________________

2A

Find the volume of a box with length 25 cm, width 10 cm, and height 5 cm.
Show your work. Write your answer using the correct units.

Answer: _______________________

1B

Plot the points (1,9) and (6,9) on the grid.
Find the distance between the two points. Show your work.

Answer: _______________________

2B

Find the volume of a box with length 16 cm, width 10 cm, and height 4 cm.
Show your work. Write your answer using the correct units.

Answer: _______________________
Below is a diagram of a room. Follow the directions in each of the questions 3A through 5A to help Thomas find out what part of the room he is facing.

3A
Thomas starts facing the front of the room. He turns $180^\circ$ to his right. What part of the room is he facing now?

_______________________________

4A
Thomas starts facing the window. He makes a $\frac{3}{4}$ turn to his right. How many degrees did he turn?

_______________________________

5A
Thomas starts facing the back of the room and turns $90^\circ$ to his left. What part of the room is he facing now?

_______________________________
Below is a diagram of a room. Follow the directions in each of the questions 3B through 5B to help Pritha find out what part of the room she is facing.

3B
Pritha starts facing the front of the room. She turns 360° to her left. What part of the room is she facing now?

_______________________________________

4B
Pritha starts facing the door. She makes a ¼ turn to her right. How many degrees did she turn?

_________________________________________

5B
Pritha starts facing the back of the room and turns 270° to her right. What part of the room is she facing now?

_________________________________________
You have been assigned as a cook for the Spaghetti Dinner at your summer camp of 125 kids. It is your responsibility also to purchase all of the food for the meal you were assigned. No problem, right? When you look at the recipe, you notice that the ingredients listed are for ONE PERSON. Find the amount of food in pounds you will need to purchase for the Spaghetti Dinner for all 125 kids. Show your work. Use the back of this page if needed.

Spaghetti Dinner
Grocery List
(weight of ingredient per person)

4 ounces spaghetti
5 ounces spaghetti sauce
½ ounce Parmesan cheese
1 ounce French bread
¾ ounce margarine
3 ounces salad mix
1½ ounces salad dressing
10 ounces milk
6 ounces mint ice cream

A little hint: “A pint is a pound the world around”

Answer: ______ounces = _______ pounds of spaghetti
________ounces = _______ pints of spaghetti sauce
________ounces = _______ pounds of Parmesan cheese
________ounces = _______ pounds of French bread
________ounces = _______ pounds of margarine
________ounces = _______ pounds of salad mix
________ounces = _______ pints of salad dressing
________ounces = _______ pints of milk
________ounces = _______ pints of ice cream
You have been assigned as a cook for the Chicken and Pasta Dinner at your summer camp of 125 kids. It is your responsibility also to purchase all of the food for the meal you were assigned. No problem, right?

When you look at the recipe, you notice that the ingredients listed are for ONE PERSON. Find the amount of food in pounds you will need to purchase for the Chicken and Pasta Dinner for all 125 kids. Show your work. Use the back of this page if needed.

A little hint: “A pint is a pound the world around”

Answer: ______ounces = ______pounds of chicken
______ounces = ______pounds of noodles
______ounces = ______pints of broth
______ounces = ______pounds of broccoli
______ounces = ______pounds of cheese sauce
______ounces = ______pounds of corn
______ounces = ______pints of milk
Grade 5

Problem Solving

Academic Standards Resources
Classroom Assessments
A

1. You are printing the programs for a school concert and have to decide how many programs to print. Do you have to know exactly how many programs you need or only approximately how many you need? Explain your answer.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2. Use estimation to decide whether $6 \times 47$ is larger or smaller than 300. Explain your answer.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

3. You are helping to plan a party for your classroom. Your committee has collected $20.00 to pay for drinks and snacks. You want to buy a large bag of popcorn for $7.79, a gallon of juice for $5.29, and a dozen cupcakes for $4.95. Do you have enough money? Show your work.
**B**

1. You are organizing the stage for a school concert and have to decide how many chairs to put on the stage for the performers. Do you have to know exactly how many chairs you need or only approximately how many you need? Explain your answer.

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

2. Use estimation to decide whether $5 \times 73$ is larger or smaller than 350. Explain your answer.

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

3. Your mother asks you to walk to the store to buy groceries. She gives you $20.00 to pay for the groceries. You buy a bag of potatoes for $3.76, one pie for $3.37, two gallons of milk for $4.38, and cheese for $11.96. Do you have enough money? Show your work.

   .
A

Use the following information to answer Questions 4 and 5.

Temperatures can be measured in degrees Fahrenheit (°F) or in degrees Celsius (°C). The freezing point of water is 32°F and 0°C. The boiling point of water is 212°F and 100°C.

4. The temperature 25°C is \( \frac{1}{4} \) of the way between the freezing point and boiling point on the Celsius scale. Find the temperature that is \( \frac{1}{4} \) of the way between the freezing point and boiling point on the Fahrenheit scale. Show your work.

5. Apply the strategies you used in Question 4 to find the Celsius temperature that corresponds to 104°F. Show your work.
Use the following information to answer Questions 4 and 5.

Temperatures can be measured in degrees Fahrenheit (°F) or in degrees Celsius (°C). The freezing point of water is 32°F and 0°C. The boiling point of water is 212°F and 100°C.

4. The temperature 75°C is \( \frac{3}{4} \) of the way between the freezing point and boiling point on the Celsius scale. Find the temperature that is \( \frac{3}{4} \) of the way between the freezing point and boiling point on the Fahrenheit scale. Show your work.

5. Apply the strategies you used in Question 4 to find the Celsius temperature that corresponds to 140°F. Show your work.
Teachers:

There are specific reading instructions for all the tests in this set. You may look up all of them in the Academic Standards Resources booklets or on the CD.

Only the directions for Problem Solving are included in this guide because they would have to be rewritten for each and every problem. That is because the tests in the Academic Standards Resources are written all for one standard, and these tests have the questions placed in a unit test matching Everyday Math lessons taught.

This is probably how you administer all your classroom assessments, so hopefully the one example for Problem Solving will be a sufficient example for all the tests.
All problems that require student to “Show your work” are worth (at least) two points.

Following the ISTEP+ rubric, one point is for correct process, one point for correct answer. Explanation is worth one point.

Grade 5
Test One (A)
Indiana Academic Standards
Everyday Math Unit 1-2

Part 1

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>One million, nine hundred forty-nine thousand one, and forty-five thousandths</td>
<td>5.1.1</td>
</tr>
<tr>
<td>2</td>
<td>1,203,142.06</td>
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<tr>
<td>3</td>
<td>2,346,000</td>
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</tr>
<tr>
<td>4</td>
<td>2,345,710</td>
<td>5.1.2</td>
</tr>
<tr>
<td>5</td>
<td>2,345,700</td>
<td>5.1.2</td>
</tr>
<tr>
<td>6</td>
<td>2,345,709.4</td>
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</tr>
<tr>
<td>7</td>
<td>&gt;</td>
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<td>8</td>
<td>&lt;</td>
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<tr>
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<td>=</td>
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<tr>
<td>10</td>
<td>&gt;</td>
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<tr>
<td>11</td>
<td>composite</td>
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<tr>
<td>12</td>
<td>prime</td>
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<tr>
<td>13</td>
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<td>14</td>
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Part 2

<p>| | | |</p>
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<tbody>
<tr>
<td>1</td>
<td>94,826</td>
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<td>1,009,384</td>
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<tr>
<td>3</td>
<td>23r16 or 23.47*</td>
<td>5.2.1</td>
</tr>
<tr>
<td>4</td>
<td>9r220 or 9.61*</td>
<td>5.2.1</td>
</tr>
<tr>
<td>5</td>
<td>Round amounts to $5.00 and $7.50, add them, and subtract from $20.00.*</td>
<td>5.2.6</td>
</tr>
<tr>
<td>6</td>
<td>No. The approximate correct change is $7.50.*</td>
<td>5.2.6</td>
</tr>
<tr>
<td>7</td>
<td>45 pieces</td>
<td>5.2.1</td>
</tr>
</tbody>
</table>

* Give credit for all valid answers.

8. 5.2.5 380.806
9. 5.2.5 132.97
10. 5.2.5 554.206
11. 5.2.5 11.59
Grade 5
Test One (B)
Indiana Academic Standards
Everyday Math Units 1-2

### Part 1

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Standard</th>
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<tbody>
<tr>
<td>1</td>
<td>Two million, one hundred sixty thousand, five hundred thirty-one, and fifty-two hundredths</td>
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<tr>
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<tr>
<td>14</td>
<td>composite</td>
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### Part 2

<table>
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<tr>
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<td>1,348,200</td>
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<td>3</td>
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<tr>
<td>4</td>
<td>34r11 or 34.94*</td>
<td>5.2.1</td>
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<td>5</td>
<td>Round amounts to $5.00 and $6.00, add them, and subtract from $26.00.*</td>
<td>5.2.6</td>
</tr>
<tr>
<td>6</td>
<td>No. The approximate correct change is $9.00.*</td>
<td>5.2.6</td>
</tr>
<tr>
<td>7</td>
<td>52 cookies</td>
<td>5.2.1</td>
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</tbody>
</table>

* Give credit for all valid answers.

8.  5.2.5  619.875
9.  5.2.5  163.68
10. 5.2.5  262.572
11. 5.2.5  41.54
Grade 5
Test Two (A)
Indiana Academic Standards
Everyday Math Unit 2

1. 5.3.1 \[3 + x = 21 \text{ or } x + 3 = 21\]
2. 5.5.7 No; that would cost him about $28 and he only has $25 to spend. (taken from problem solving activity Party Plan)
3. 5.6.2 8
4. 5.6.2 9
5. 5.6.2 7 12/15 or 7 4/5
6. 5.6.2 5
7. 5.6.3 0 to 1 or 1 to 0; 1
8. 5.6.4 1/6 or one out of six *
9. 5.6.4 1/2 or one out of two *
10. 5.6.4 0
11. 5.6.4 1/24 or one out of twenty-four *

*give credit for valid answer

Grade 5
Test Two (B)
Indiana Academic Standards
Everyday Math Unit 2

1. 5.3.1 \[x – 17 = 23\]
2. 5.5.7 Yes; that would only cost about $19 and she has $25 to spend. (taken from problem solving activity Party Plan)
3. 5.6.2 9
4. 5.6.2 8
5. 5.6.2 8 10/15 or 8 2/3
6. 5.6.2 3
7. 5.6.3 0 to 1 or 1 to 0; 0
8. 5.6.4 1/2 or one out of two *
9. 5.6.4 1/5 or one out of five *
10. 5.6.4 0
11. 5.6.4 5/6 or five out of six *

*give credit for valid answer
12. 5.4.5 Students should draw a circle with a radius of 3 cm.
13. 5.4.5 6
14. 5.4.5 12 ½ or 12.5
### Grade 5
### Test Three (B)
### Indiana Academic Standards
### Everyday Math Unit 3

<p>| | | | | | | |</p>
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<tr>
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<tbody>
<tr>
<td>1</td>
<td><img src="image" alt="Diagram" /></td>
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<td></td>
<td></td>
<td></td>
<td>5.4.1</td>
</tr>
<tr>
<td>2</td>
<td>A 45°</td>
<td>B 45°</td>
<td>C 90°</td>
<td></td>
<td></td>
<td>5.4.1</td>
</tr>
<tr>
<td>3</td>
<td>Students should draw a triangle that does not have any sides of equal length.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.4.1, 5.4.2</td>
</tr>
<tr>
<td>4</td>
<td>An equilateral triangle has all sides of equal length (congruent).*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.4.2</td>
</tr>
<tr>
<td>5</td>
<td>Students should draw a triangle that has two angles of equal measure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.4.1, 5.4.2</td>
</tr>
<tr>
<td>6</td>
<td>An acute triangle is a triangle in which all of the angles measure less than 90°.*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.4.2</td>
</tr>
<tr>
<td>7</td>
<td><img src="image" alt="Diagram" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.4.3</td>
</tr>
<tr>
<td>8</td>
<td>octagon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.4.4</td>
</tr>
<tr>
<td>9</td>
<td>rhombus</td>
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<td></td>
<td>5.4.4</td>
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<tr>
<td>10</td>
<td>trapezoid</td>
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<td></td>
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<td>5.4.4</td>
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<tr>
<td>11</td>
<td>pentagon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.4.4</td>
</tr>
</tbody>
</table>

* Give credit for all valid answers.

12. **5.4.5**  Students should draw a circle with a radius of 2 cm.
13. **5.4.5**  4
14. **5.4.5**  8 ½ or 8.5
Grade 5
Test Four (A)
Indiana Academic Standards
Everyday Math Units 4-5

<table>
<thead>
<tr>
<th></th>
<th>Students should shade 45 of the boxes.</th>
<th></th>
</tr>
</thead>
</table>
| 2 | \[
\frac{45}{100} \text{ or } \frac{9}{20}
\] | 5.1.4 |
| 3 | \[
\frac{5}{8}
\] | 5.1.5 |
| 4 | \[
\frac{3}{7}
\] | 5.1.5 |
| 5 | D | 5.1.7 |
| 6 | C | 5.1.7 |
| 7 | A | 5.1.7 |
| 8 | B | 5.1.7 |

9. 5.5.6 32°F and 0°C; 212°F and 100°C
10. 5.5.6 Fahrenheit, because water boils at 100°C.

Grade 5
Test Four (B)
Indiana Academic Standards
Everyday Math Units 4-5

<table>
<thead>
<tr>
<th></th>
<th>Students should shade 65 of the boxes.</th>
<th></th>
</tr>
</thead>
</table>
| 2 | \[
\frac{65}{100} \text{ or } \frac{13}{20}
\] | 5.1.4 |
| 3 | \[
\frac{7}{12}
\] | 5.1.5 |
| 4 | \[
\frac{4}{7}
\] | 5.1.5 |
| 5 | D | 5.1.7 |
| 6 | A | 5.1.7 |
| 7 | B | 5.1.7 |
| 8 | C | 5.1.7 |

9. 5.5.6 32°F and 0°C; 212°F and 100°C
10. 5.5.6 Fahrenheit, because 30°C would be about 80°F and no need for a jacket
Grade 5
Test Five (A)
Indiana Academic Standards
Everyday Math Units 4-5

1. 5.6.1
   Any reasonable explanation

2. 5.2.2
   8 2/24 or 8 1/12

3. 5.2.2
   11 5/6

4. 5.2.2
   1 34/35

5. 5.2.2
   7 37/56

6. 5.2.4
   5/8

7. 5.2.3
   Student should draw picture to represent the multiplication of fractions.
   Number sentence 2/3 X 1/4 = 2/12 or 1/6

8. 5.2.3
   Student should draw picture to represent the division of fractions.
   Number sentence 1/2 ÷ 1/4 = 2

(Problems 7 and 8 are from the Curriculum Framework Activities Multiplying Fractions and Dividing by Fractions.)

Grade 5
Test Five (B)
Indiana Academic Standards
Everyday Math Units 4-5

1. 5.6.1
   Any reasonable explanation

2. 5.2.2
   7 19/24

3. 5.2.2
   10 11/12

4. 5.2.2
   1 3/28

5. 5.2.2
   1 7/10

6. 5.2.4
   1 1/8

7. 5.2.3
   Student should draw picture to represent the multiplication of fractions.
   Number sentence 3/4 X 1/2 = 3/8

8. 5.2.3
   Student should draw picture to represent the division of fractions.
   Number sentence 2/3 ÷ 1/6 = 4

(Problems 7 and 8 are from the Curriculum Framework Activities Multiplying Fractions and Dividing by Fractions.)
Grade 5
Test Six (A)
Indiana Academic Standards
Everyday Math Unit 9

1.  5.3.4

Check for correct position of points on grid.

2.  5.4.6

3.  5.4.6

4.  5.5.2  \(3 \times 7 = 21\) square meters (m\(^2\))
5.  5.5.1  \(\frac{1}{2} \times 5 \times 2 = 5\) square centimeters (cm\(^2\))
6.  5.5.1  \(\frac{1}{2} \times 4 \times (5 + 2) = 14\) square inches (in\(^2\)) or \((\frac{1}{2} \times 4 \times 5) + (\frac{1}{2} \times 4 \times 2) = 14\) square inches (in\(^2\)) *
7.  5.5.2  \(4 \times 3 = 12\) square yards *
8.  5.5.2  \((2 \times 4) + (2 \times 3) = 14\) yards *
9.  5.5.3  \((9 \times 15) - (3 \times 7) - (3 \times 4) = 102\) square feet (ft\(^2\)) *

* give credit for all valid answers

note: 7 and 8 – students may question having to overlap to cover the board and to cover the border – accept their answers if they have sufficient explanation
Grade 5
Test Six (B)
Indiana Academic Standards
Everyday Math Unit 9

1. 5.3.4
   ![Grid Image]
   Check for correct position of points on grid.

2. 5.4.6

   ![Diagram Image]

3. 5.4.6

   ![Diagram Image]

4. 5.5.2  3 X 7 = 21 square meters (m²)
5. 5.5.1  ½ X 5 X 2 = 5 square centimeters (cm²)
6. 5.5.1  ½ X 4 X (5 + 2) = 14 square inches (in²) or
   (½ X 4 X 5) + (½ X 4 X 2) = 14 square inches (in²) *
7. 5.5.2  5 X 4 = 20 square yards *
8. 5.5.2  (2 X 5) + (2 X 4) = 18 feet *
9. 5.5.3  (16 X 10) – (2 X 6) – (3 X 6) = 130 square feet (ft²) *

- give credit for all valid answers

note: 7 and 8 – students may question having to overlap to cover the board and to cover the border – accept their answers if they have sufficient explanation
Grade 5 Test Seven (A)
Indiana Academic Standards Everyday Math Unit 10

1. 5.3.2 45
2. 5.3.2 90
3. 5.3.2 32
4. 5.3.2 22
5. 5.3.3 7 X 35 + 7 X 12
6. 5.3.7 135
7. 5.3.5

8. 5.3.7 (Curriculum Framework Activity *What the Graph Tells*)

1. $7
2. $x$ = **Number of friends joining** $y$ = **Number of free CDs**
3. $y = 4 + 3$
   $y = 7$
### Grade 5

**Test Seven (B)**

**Indiana Academic Standards**

**Everyday Math Unit 10**

1. 5.3.2 37
2. 5.3.2 15
3. 5.3.2 30
4. 5.3.2 73
5. 5.3.3 9 \times 16 + 9 \times 27
6. 5.3.7 325

![Graph](image)

7. 5.3.5

8. 5.3.5 *(Curriculum Framework Activity *What the Graph Tells]*)

![Graph](image)
1. 5.3.6

2. 5.5.4 1,250 cubic centimeters (cm³)
3. 5.4.7 back
4. 5.4.7 270°
5. 5.4.7 window
6. 5.5.5 (Curriculum Framework Activity Cooking for a Small Army)

Spaghetti Dinner
Conversions

32 pounds spaghetti
40 pounds spaghetti sauce
4 pounds Parmesan cheese
8 pounds French bread
6 pounds margarine
24 pounds salad mix
12 pounds salad dressing
79 pounds milk
47 pounds mint ice cream
<table>
<thead>
<tr>
<th>Item Number</th>
<th>Answer</th>
<th>Standards Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Approximately You want to make sure that you do not run out of programs. If you approximate with a number that is greater than the number of people you are expecting, then you will make sure that you do not run out of programs.*</td>
<td>5.7.5</td>
</tr>
<tr>
<td>2</td>
<td>Smaller 6 (\times) 47 is smaller than 300, because 6 (\times) 50 = 300 and 47 &lt; 50.*</td>
<td>5.7.6, (5.2.6)</td>
</tr>
<tr>
<td>3</td>
<td>You do have enough money. The total cost is $18.03, which is less than $20.00.*</td>
<td>5.7.7, (5.5.7)</td>
</tr>
<tr>
<td>4</td>
<td>(\frac{1}{4} \times (212 - 32) = 45^*) Answer is 32 + 45 = 77</td>
<td>5.7.1, 5.7.3, 5.7.4, (5.2.4, 5.5.6)</td>
</tr>
<tr>
<td>5</td>
<td>10(^{4})F is (\frac{4}{10}) (or (\frac{72}{180})) of the way between 32(^{\circ})F and 212(^{\circ})F.* The answer in (^{\circ})C is (\frac{4}{10} (100 - 0)) which equals 40(^{\circ})C.</td>
<td>5.7.1, 5.7.3, 5.7.4, 5.7.9, (5.2.4, 5.5.6)</td>
</tr>
</tbody>
</table>

* Give credit for all valid answers.
### Grade 5

#### Problem Solving

#### Academic Standards Resources

#### Classroom Assessments (B)

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Answer</th>
<th>Standards Indicator</th>
</tr>
</thead>
</table>
| 1           | Exactly  
You want to make sure that you have exactly the right number of chairs so that each performer has a chair.* | 5.7.5 |
| 2           | Larger  
5 × 73 is larger than 350, because 5 × 70 = 350 and 70 < 73.* | 5.7.6, (5.2.6) |
| 3           | You do not have enough money.  
The total cost is $23.47, which is greater than $20.00.* | 5.7.7, (5.5.7) |
| 4           | \[
\frac{3}{4} \times (212 - 32) = 135^* \\
Answer is 32 + 135 = 167
\] | 5.7.1, 5.7.3, 5.7.4, (5.2.4, 5.5.8) |
| 5           | 140°F is \[ \frac{3}{5} \text{ or } \frac{108}{180} \] of the way between 32°F and 212°F.*  
The answer in °C is \[ \frac{3}{5} (100 - 0) \] which equals 60°C. | 5.7.1, 5.7.3, 5.7.4, 5.7.9, (5.2.4, 5.5.5) |

* Give credit for all valid answers.
1. 5.3.6

2. 5.5.4 640 cubic centimeters (cm³)
3. 5.4.7 front
4. 5.4.7 90°
5. 5.4.7 window
6. 5.5.5 (Curriculum Framework Activity *Cooking for a Small Army*)

Chicken & Pasta Dinner
Conversions

- 24 pounds chicken
- 20 pounds noodles
- 16 pounds broth
- 40 pounds broccoli
- 8 pounds cheese sauce
- 32 pounds corn
- 79 pounds milk
- 24 pounds chocolate pudding