Name: __________________________

CLA Summer 2018

Rising 8th STEM Stretch Packet

☐ Week One (5/29-6/2) PI: __________
  o Minute Math 1
  o Criss-Cross Puzzler
  o Unit Rates A+B
  o Khan Academy Video: Unit Rates

☐ Week Two (6/5-6/9) PI: __________
  o Minute Math 10
  o Pattern Block Puzzler
  o Proportional Relationships A+B
  o Khan Academy Video: CoP

☐ Week Three (6/12-6/16) PI: __________
  o Minute Math 20
  o Exponent Experts Only Puzzler
  o Multiplying Rational Numbers A+B
  o Khan Academy Video: Multiplying

☐ Week Four (6/19-6/23) PI: __________
  o Minute Math 30
  o Fraction Hunt Puzzler
  o Dividing Rational Numbers A+B
  o Khan Academy Video: Dividing

☐ Week Five (6/26-6/30) PI: __________
  o Minute Math 40
  o Domino Math Puzzler
  o Expressions and Equations A+B
  o Khan Academy Video: CLT

☐ Week Six (7/3-7/7) PI: __________
  o Minute Math 50
  o Doggone Fun Puzzler
  o Inequalities A+B
  o Khan Academy Video: IEQ

☐ Week Seven (7/10-7/14) PI: __________
  o Minute Math 60
  o Square Madness Puzzler
  o Scale Drawings A+B
  o Khan Academy Video: SD

☐ Week Eight (7/17-7/21) PI: __________
  o Minute Math 70
  o Dialing for Answers Puzzler
  o Volume and SA A+B
  o Khan Academy Video: SA

☐ Week Nine (7/24-7/28) PI: __________
  o Minute Math 80
  o Brain Rattler Puzzler
  o Percent Problems A+B
  o Khan Academy Video: Percent

☐ Week Ten (7/31-8/4) PI: __________
  o Minute Math 90
  o Shop Until you Drop Puzzler
  o Circles A+B
  o Khan Academy Video: Area of Circle

Parents, please initial (PI) next to each week once you’ve checked your scholar’s work for completion and correctness. Keep up to date on the content each week by checking CLA’s website weekly for math videos and hints as we move through the Summer.
CLA Summer 2018

All rising 7th grade scholars are required to complete the STEM summer stretch packet attached along with this letter. Scholars have been assigned different activities and skills based on their strengths and weaknesses in math from this past year. It’s therefore very important to complete this packet thoroughly, completely and to the best of your ability. It also is designed to help your scholars keep their mathematical muscle exercised, with different activities to guide them along in their work each week over the summer break.

- Minute Math
  - Provide your student with a quiet environment where they can sit down and focus on this weekly task. Students are to be given two minutes to complete the ten questions for that week’s minute math. Parents, if you have time or would like to see where your scholar stands with mental math skills, go over this with them after those two minutes.

- Math Puzzler
  - Each week to promote a math mindset and analytical thinking, a puzzler is attached. Some deal with fraction operations, while others deal with algebra and place value. The intent is to challenge your scholar, build that math muscle, and allow them an opportunity to grapple with the math while solving a puzzle.

- Common Core Skill
  - Each week, a practice A+B of a concept scholars learned in 7th grade is assigned for review. For further explanation, a Khan Academy video is assigned to help scholars refresh their memory on how this skill works. A worksheet is attached for students to take notes and record examples and their work for these online skills. Visit CLA’s website or Khan Academy.org for direct links to these supports.

This packet is due on the first day of school as the first mastery grade in math class. Students must complete the packet in its entirety (every question should be answered and every blank should be filled in, including work being shown). Students who continue to push themselves academically during breaks do the best in all of their classes; accordingly, students should be thinking, doing, or practicing mathematics in one form or another every day of the summer.

Please contact the office at 216-229-8185 or e-mail michael.slopnick@citizensleadership.org if you have any questions or concerns. Check out CLA’s website for weekly math tips and hints aligned to the packets, and check back frequently for updates on Summer math sessions at CLA. Have a wonderful summer and enjoy the puzzlers!

Sincerely,

Ms. Gruhin and Mr. Slopnick

*Parents, please initial (P) next to each week once you’ve checked your scholar’s work for completion and correctness. Keep up to date on the content each week by checking CLA’s website weekly for math videos and hints as we move through the Summer.*
1. Simplify: \(12(2 + 7 + 1) = \)

2. \(\frac{3 \cdot 7}{10} = \)

3. Circle all of the following equal to \(\frac{2}{5}\): 0.4 \(\frac{4}{100}\) 40% [boxes for selection]

4. \(10 \cdot \[] = 5\)

5. Cross out the three-dimensional shape. [boxes with shapes]

6. Each side of the regular pentagon is 5 centimeters. What is the perimeter? _______

7. In the graph, Alex has _____ times as much money as Annie.

8. If \(a = 5\) and \(b = 4\), then \(2a + b = \) _______.

9. If \(3x = 27\), then \(x = \) _______.

Crisscross Number Puzzles

Solve the subtraction problems. Each of the eight 4-digit answers fits into the puzzle below. One digit must be placed in each box to form a 4-digit number in each row (from left to right) and each column (from top to bottom). The clues will help you decide where to place the numbers.

1) \(30,771 - 29,419\)  
2) \(16,570 - 13,292\)  
3) \(70,610 - 62,410\)  
4) \(49,905 - 47,559\)

5) \(11,852 - 8,402\)  
6) \(19,439 - 9,829\)  
7) \(12,555 - 5,004\)  
8) \(11,593 - 8,454\)

**Clues**
A. All of the digits are odd.
B. The first digit is even and less than 5.
C. The second and third digits are equal.
D. The sum of the digits is 10.
E. The last digit is 8.
F. The first digit is 1.
G. The sum of the digits is 12.
H. The number is even and greater than 9,000.

Follow the same instructions for this puzzle. Be careful—it has only three clues.

9) \(34,259 - 24,941\)  
10) \(15,031 - 11,390\)  
11) \(10,014 - 2,519\)  
12) \(9,856 - 7,683\)

13) \(15,342 - 9,711\)  
14) \(11,916 - 2,344\)  
15) \(7,378 - 5,981\)  
16) \(16,866 - 8,713\)

**Clues**
A. The sum of the digits is 23.
E. The number is divisible by 3.
G. The number is divisible by 5.
1. Brandon enters bike races. He bikes $8\frac{1}{2}$ miles every $\frac{1}{2}$ hour. Complete the table to find how far Brandon bikes for each time interval.

| Distance (mi) | $8\frac{1}{2}$ | | | | Time (h) | $\frac{1}{2}$ | 1 | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |

Simplify each complex fraction.

2. $\frac{3}{4} \div \frac{2}{3} = \frac{9}{8}$

3. $\frac{1}{2} \div \frac{3}{8} = \frac{4}{3}$

4. $\frac{4}{5} \div \frac{2}{3} = \frac{12}{5}$

5. $\frac{6}{7} \div \frac{1}{7} = 6$

Find each unit rate.

6. Julio walks $3\frac{3}{2}$ miles in $1\frac{1}{4}$ hours.

7. Kenny reads $\frac{5}{6}$ page in $\frac{2}{3}$ minute.

8. Marcia uses $\frac{3}{4}$ cup sugar when she halves the recipe.

9. Sandra tiles $\frac{5}{4}$ square yards in $\frac{1}{3}$ hour.

The information for two cell phone companies is given.

10. What is the unit rate for On Call?

11. What is the unit rate for Talk Time?

12. Determine which of the companies offers the best deal. Explain your answer.

13. What if? Another company offers a rate of $0.05$ per minute.

   a. How would you find the unit rate per hour?

   b. Is this a better deal than On Call or Talk Time?
PRACTICE

Use the problem-solving steps to help you.

1. Marita sold 54 cups of lemonade in \(\frac{1}{2}\) hour. Jennifer sold 49 cups of fruit punch in \(\frac{1}{3}\) hour. Which girl sold more drinks per hour?

2. A \(\frac{3}{4}\)-pound box contained 36 fruit tarts. How many tarts would be in a one-pound box?

3. A coach compared the scoring of four players over the season. Lorraine played in 8 games and scored 128 points. Jana played in 12 games and scored 168 points. Maggie played in 9 games and scored 135 points. Nikki played in 17 games and scored 136 points. Which player scored the greatest number of points per game?
Name: ____________________

Khan Skill Tracker for ____________________

Directions: Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
For Problems 1–3, circle True or False.

1. \(2 \times 6 \times 3 \times 0 \times 4 > 12 \times 1 \times 1\) True or False

2. \(\sqrt{16} = 4\) True or False

3. \(2^3 = 6\) True or False

4. Circle each of the following that are whole numbers: \(\frac{12}{2}, \frac{2}{12}, \frac{8}{8}, 2^2, \left[\frac{1}{2}\right]^2\)

5. What is \(\frac{1}{2}\) of \(\frac{3}{4}\)?

6. Draw the line of symmetry on the figure to the right.

7. Maps often show north as pointing toward the top of the page.
   If you went from A2 to E3, in which direction would you be going?
   a. NE
   b. NW
   c. SE
   d. SW

For Problems 8–10, use the spinners to the right.

8. How many possible results could occur if both spinners are spun?

9. What are the chances of spinning red and 3?

10. What are the chances of spinning blue and an odd number?
Pattern Block Maze

If you can find your way through the pattern block maze from start to finish without crossing over any shapes with numbers that are divisible by 2, 3, or 4, you are a superstar. If you find a path where none of the numbers are divisible by 2, 3, or 4 and the sum of the numbers equals 389, you are a genius! A path may be formed by connecting a corner or a side.
Tell whether the relationship is a proportional relationship. If so, give the constant of proportionality.

<table>
<thead>
<tr>
<th>Number of Minutes</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Seconds</td>
<td>180</td>
<td>240</td>
<td>300</td>
<td>360</td>
<td>420</td>
</tr>
</tbody>
</table>

3. Naomi reads 9 pages in 27 minutes, 12 pages in 36 minutes, 15 pages in 45 minutes, and 50 pages in 150 minutes.

4. A scuba diver descends at a constant rate of 8 feet per minute.

Write an equation for the relationship. Tell what the variables represent.

5. It takes Li 1 hour to drive 65 miles, 2 hours to drive 130 miles, and 3 hours to drive 195 miles.

6. There are 3.9 milligrams of calcium in each ounce of cooked chicken.

<table>
<thead>
<tr>
<th>Gallons of Gasoline</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cost ($)</td>
<td>9.45</td>
<td>12.60</td>
<td>15.75</td>
<td>18.90</td>
</tr>
</tbody>
</table>

Information on three car rental companies is given.

9. Write an equation that gives the cost \( y \) of renting a car for \( x \) days from Rent-All.

<table>
<thead>
<tr>
<th>Rent-All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days</td>
</tr>
<tr>
<td>Total Cost ($)</td>
</tr>
</tbody>
</table>

10. What is the cost per day of renting a car from A-1?

<table>
<thead>
<tr>
<th>A-1 Rentals</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cost ( y ) of renting a car for ( x ) days is given by ( y = 22.5x ).</td>
</tr>
</tbody>
</table>

11. Which company offers the best deal? Why?

<table>
<thead>
<tr>
<th>Car Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cost of renting a car from us is just $19.25 per day!</td>
</tr>
</tbody>
</table>
PRACTICE

Use the problem-solving steps to help you.

1. Cassandra has a leaky roof. She places a bucket on the floor below the leak. After 2 hours, there are 26 teaspoons of water in the bowl. After 7 hours, there are 91 teaspoons of water in the bowl. Is the rate of teaspoons per hour constant? What is the constant of proportionality?

2. Sierra is downloading songs. In 9 minutes, she downloads 18 songs. In 18 minutes, she downloads 36 songs. Is the rate of downloads per minute constant? What is the constant of proportionality?

3. Derek is training for a long bicycle race. He bikes 105 miles in 7 days. A few weeks later, he bikes 120 miles in 10 days. Is the rate of miles per day constant? Explain your answer.
Name: ______________________

Khan Skill Tracker for ______________________

**Directions:** Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
1. \(18 - 5 \cdot 3 = \)

2. \((9 + 4)(10 - 8) = \)

3. Is \(\sqrt{34}\) closer to 5 or 6? _____

4. If \(q - 3.1 = 4.6\), then \(q = \) _____.

5. Shade 15\% of the box. (Hint: 7.5\% is already shaded for you.)

6. Fill in the missing number in the box.

\[ \begin{align*}
10 \rightarrow 15 \rightarrow 20 \\
5 \rightarrow 10 \rightarrow 20 \rightarrow \boxed{} 
\end{align*} \]

For Problems 7–9, use the Venn diagram to the right.

7. Draw arrows to connect the square roots.

8. To which circle would the number 5 belong? _____

9. The sum of the numbers in circle A is a prime number. Circle: True or False

10. If 1 km = 1,000 meters, then \(2\frac{1}{2}\) km = _____ meters.
Exponent Experts Only

If you are experienced at finding exponents, this exercise is for you! Solve the problems, then use the clues in the puzzle to fit your answers in the correct spaces.

Find the product and write the answer in the puzzle. Each digit can occupy only one place to make the whole puzzle fit together perfectly. The first one has been done for you.

\[
\begin{align*}
7^4 &= 2,401 & 11^2 &= \_\_\_\_ \_ & 3^6 &= \_\_\_\_\_\_ \\
3^7 &= \_\_\_\_\_\_\_\_ & 17^2 &= \_\_\_\_\_\_ & 13^2 &= \_\_\_\_\_\_ \\
43^2 &= \_\_\_\_\_\_\_\_ & 2^7 &= \_\_\_\_\_\_\_\_ & 3^5 &= \_\_\_\_\_\_\_\_ \\
95^2 &= \_\_\_\_\_\_\_\_\_\_ & 18^3 &= \_\_\_\_\_\_\_\_\_\_ & 31^2 &= \_\_\_\_\_\_\_\_\_\_ \\
33^2 &= \_\_\_\_\_\_\_\_\_\_\_ & 12^3 &= \_\_\_\_\_\_\_\_\_\_\_ & 19^2 &= \_\_\_\_\_\_\_\_\_\_\_ \\
27^2 &= \_\_\_\_\_\_\_\_\_\_\_\_\_ & 8^4 &= \_\_\_\_\_\_\_\_\_\_\_\_\_ & 69^2 &= \_\_\_\_\_\_\_\_\_\_\_\_\_ \\
21^2 &= \_\_\_\_\_\_\_\_\_\_\_\_\_ & 4^6 &= \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \\
\end{align*}
\]
Find each product.

1. \(-1(9) = \) ________
2. \(-\frac{2}{3}(-\frac{12}{7}) = \) ________
3. \((-9)(-6) = \) ________

4. \(-2(50) = \) ________
5. \((-4)(15) = \) ________
6. \((3)(-52.4) = \) ________

7. \((6)\left(-\frac{7}{15}\right) = \) ________
8. \((-\frac{19}{9})(0) = \) ________
9. \((8)(-12) = \) ________

10. Flora made 7 withdrawals of $75 each from her bank account. How much did she withdraw in total?

11. Each of a football team's 3 plays resulted in a loss of 5 yards. How many yards in total did they lose in the 3 plays?

12. The temperature dropped 2 °F every hour for 6 hours. What was the total number of degrees the temperature dropped in the 6 hours?

13. A mountain climber climbed down a cliff \(\frac{1}{4}\) mile at a time. He did this 5 times in one day. How many miles did he climb down?

14. The price of one share of Acme Company declined $3.50 per day for 4 days in a row. How much did the price of one share decline in total after the 4 days?

15. In one day, 18 people each withdrew $100 from an ATM machine. How much money was withdrawn from the ATM machine?

16. Describe a real-world situation that can be represented by the product \((-34)(3)\). Then find the product and explain what the product means in terms of the real-world situation.
PRACTICE

Use the problem-solving steps to help you.

1. In a board game, Oren had to move his piece backward 3 spaces for each of his last six turns. Find how far backward he moved during his last six turns.

2. The audience at a movie theater filled \( \frac{3}{5} \) of the seats in 20 rows. How many full rows could the audience fill in all?

3. An airport had \( \frac{1}{2} \) inch of rain every day for 6 days. There was \( \frac{1}{4} \) inch of rain each day for the 6 following days. Find the total rain that was measured over all 12 days.
Khan Skill Tracker for ____________________________

Directions: Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
1. Laurie says that $2 + 3 \times 2 + 3 = 13$. Ray says that $2 + 3 \times 2 + 3 = 11$. Who is correct? ____________

2. The first step in simplifying $400 - 5(12 + 13)$ would be to _______.
   a. add             b. subtract        c. multiply       d. divide

3. Insert parenthesis ( ) to make the following problem true: $3 + 6 - 2 \cdot 4 = 19$

4. Does $a = 4$ solve the equation $5a - 3 = 17$? Circle: Yes or No

5. In the grid to the right, circle a diagonal sum that equals 15.
   (Hint: Look for three numbers.)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>6</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>3</td>
<td>8</td>
</tr>
</tbody>
</table>

6. Circle all the numbers that make the inequality $a + 2 < 7$ true.
   2  3  4  5  6  7

7. If $x + \frac{2}{2} = \frac{5}{2}$, then $x =$ _______

For Problems 8–10, shade the box with the correct equivalent.

8. 1 mile = 5,280 feet  454 grams  2.54 inches  1 kilometer

9. 1 ton = 16 ounces  2,000 pounds  454 grams  1,000 milligrams

10. 1 gallon = 2 cups  1 liter  1,000 milliliters  4 quarts
### Fraction Hunt

Compare the fractions below using < or >. Then hunt for each of the larger fractions in word form in the word search below. The words may be found vertically, horizontally, diagonally, or backward. (Some fractions may appear more than once.)

<table>
<thead>
<tr>
<th>1</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Word Search:

```
f e h y s h t n e v e s e n o  
n a c d y t w o t h i r d s m  
s i d x v f t n p z g t b e t  
h s e h i e t e g v b f k v h  
t n d t r e l h g k k s n e r  
 f r u r v c u a v t r e i n e  
 l d q u i b n l c u d v n e e  
 e p b o x h q f b o r e e i e  
 w n c f w c t f w p i n t g i  
 t a t e r c a o o i h n e h g  
 n c e n i n k l w i t i n t h  
 e q w o m k a s o t e n t h t  
 v e f i v e s e v e n t h s h  
 e z e w n l m u b q o h s s s s  
 s c w d i e b u i w r s m a z  ```
Find each quotient.

1. \( \frac{0.72}{0.9} = \)________

2. \( \left( \frac{1}{5} \right) = \)________

3. \( \frac{56}{7} = \)________

4. \( \frac{251}{4} \div \left( -\frac{3}{8} \right) = \)________

5. \( \frac{75}{15} = \)________

6. \( \frac{-81}{-13} = \)________

7. \( \frac{3}{9} = \)________

8. \( \frac{12}{0.03} = \)________

9. \( \frac{0.65}{-0.5} = \)________

10. \( \frac{5}{2} = \)________

11. \( \frac{\frac{1}{3}}{-\frac{1}{2}} = \)________

12. \( \frac{-120}{-6} = \)________

13. The price of one share of ABC Company declined a total of $45 in 5 days. How much did the price of one share decline, on average, per day?

14. A mountain climber explored a cliff that is 225 yards high in 5 equal descents. How many yards was one descent?

15. Describe a real-world situation that can be represented by the quotient \(-85 \div 15\). Then find the quotient and explain what the quotient means in terms of the real-world situation.


17. **Critical Thinking** Should the quotient of an integer divided by a non-zero integer always be a rational number? Why or why not?
PRACTICE

Use the problem-solving steps to help you.

1. Malik ran a total of 3 miles around his high school track. Each lap around the track is \(\frac{1}{4}\) mile. How many laps did Malik run?

2. The water level in a leaky swimming pool fell by the same amount each day for 6 days. Over that time, the water level measured 4 inches lower. What was the change in the water level each day?

3. Molly's thermometer outside her house showed that the temperature fell 8 degrees in the last 12 hours. What was the change in the temperature per hour during that time?

4. Salman baked 2 pounds of brownies to serve to friends. If each brownie weighed \(\frac{1}{16}\) of a pound, how many brownies did he bake?
Name: ___________________________

Khan Skill Tracker for ___________________________

Directions: Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
1. Complete the times table.

<table>
<thead>
<tr>
<th></th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>117</td>
</tr>
</tbody>
</table>

2. Order the decimals \{0.058, 0.508, 0.085, 0.580\} from least to greatest.

3. Draw a dot at the midpoint of A and B and label it C. 

4. Using the line in Problem 3, if \( \overline{AB} = 11 \), then \( \overline{AC} = \) _____.

For Problems 5–7, use the frequency table to the right.

<table>
<thead>
<tr>
<th>Score</th>
<th>Tally</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>( \underline{\underline{1}} )</td>
</tr>
<tr>
<td>90</td>
<td>( \underline{\underline{\underline{1}} \underline{1}} )</td>
</tr>
<tr>
<td>85</td>
<td>( \underline{\underline{\underline{1}} \underline{1}} )</td>
</tr>
<tr>
<td>80</td>
<td>( \underline{\underline{\underline{1}} \underline{1}} )</td>
</tr>
<tr>
<td>75</td>
<td>( \underline{1} )</td>
</tr>
<tr>
<td>70</td>
<td>( \underline{1} \underline{1} )</td>
</tr>
<tr>
<td>65</td>
<td>( \underline{1} )</td>
</tr>
<tr>
<td>Below 60</td>
<td>( \underline{\underline{1}} \underline{1} )</td>
</tr>
</tbody>
</table>

5. What was the highest score? ______

6. What score occurred most often? ______

7. How many people took the test? ______

8. The length and width of a box are 4 in. The volume is 48 in\(^3\). What is the height of the box? ______

9. Circle the numbers that are greater than 1,100.

   1,109   \( 10^4 \)   1,006   999   \( 1 \text{ billion} \)

10. \( 4 \cdot 6 \cdot 8 \cdot 0 \cdot 5 \cdot 2 = \)
Domino Math

Think of each domino as a fraction. The top number of dots is the numerator and the bottom number of dots is the denominator. For example, the first domino in number 1 below equals $\frac{3}{8}$. Use the dominoes in the fraction bank to make each of the number statements true. Use each domino only once. You may use numbers or draw dots to show your answers. The first problem has been done for you.

FRACTION BANK

1. \[ \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} = \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} \]

2. \[ \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} = \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} \]

3. \[ \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} = \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} \]

4. \[ \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} = \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} \]

5. \[ \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} = \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} \]

6. \[ \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} = \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} \]

7. \[ \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} = \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} \]

8. \[ \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} = \begin{array}{c|c|c} \hline \text{Domino} & \begin{array}{c} \hline \text{Domino} \\ \hline \end{array} & \text{Domino} \\ \hline \end{array} \]
Solve each equation.

1. \(4x + 12 = 60\)

2. \(5(3x - 4) = 40\)

3. \(\frac{x}{3} = 33\)

4. \(\frac{8x}{2} = 24\)

5. \(2(-3x - 4) = 100\)

6. \(-\frac{2x}{5} = 2\)

7. For 15 weeks, Sue put the same amount of money in a jar. Then she took $9 out to spend on a friend’s birthday present. She had $21 left. How much did she put in each week?

8. Matt gives half of his books to the local library and kept the other half. His best friend gives him 3 more books. He now has 57 books. How many did he have to start?

9. Half of Allen’s test score plus eight equals 50. What did Allen score on his test?

10. Carl is paid $10 plus $8 an hour. He was paid $66. How many hours did he work?

11. Barry swam three times as many laps as George plus one more lap. Barry swam 25 laps. How many laps did George swim?

12. Gayle has 3 less than two times as many stickers as Robin. Gayle has 25 stickers. How many does Robin have?

13. Mika used the formula \(A = \frac{(b_1 + b_2)h}{2}\) to find the area of a trapezoid. Show 2 ways to find the length of the base, \(b_1\), if the area is 32 cm, the height is 4 cm, and the length of \(b_2\) is 6 cm.

\[b_1 = \text{__________}\]
PRACTICE

Use the problem-solving steps to help you.

1. Alana buys one shirt with a regular price of $p$ dollars and 2 sweaters with a regular price of $s$ dollars. She uses a coupon so that she pays only half the regular price. Write an expression that shows how much money Alana spends in all. Then expand the expression.

2. Molly buys dinner for her family. She buys $x$ burgers at $1.80 each and $y$ milkshakes at $1.50 each. She also pays $0.10 of tax for every dollar she spends. Write an expression that shows how much tax she pays. Then expand the expression.

3. For his birthday party, Enrique rents 7 tables at $t$ dollars each and 56 chairs at $c$ dollars each. Write an expression that shows his total cost, and factor it completely.
Khan Skill Tracker for ________________

Directions: Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
For Problems 1–3, use the grid to the right.

1. Shade 15% of the squares.

2. What percent of the squares will NOT be shaded? ____

3. What is the perimeter of the grid? ____

4. Shade the squares in the 4th shape to complete the sequence.

5. The ages of the Eagle Cadet group members are 4, 6, 7, 7, and 11. What is the mode age? ____

6. What is the mean age of the Cadet group in Problem 5? ____

7. What is the median age of the Cadet group in Problem 5? ____

8. $3 + 6^2 ÷ 12 =$

9. If $y = 3x - 6$ and $x = 7$, then $y =$ ____

10. $2^2(3 + 7 - 1) =$
Doggone Fun

Get ready for some hilarious riddles about a man’s best friend—his dog!

1. **What do you call a hot dog?** To find the answer, write the letters spelling each quotient (in lowest terms) in the puzzle. The letters in the bold squares show the answer. The first one has been done for you.

\[
\frac{2}{15} \div \frac{2}{3} = \text{O N E - F I F T H}
\]

\[
\frac{1}{3} \div \frac{3}{4} = A
\]

\[
\frac{1}{8} \div \frac{5}{4} = K
\]

2. **What do you call a dog that tells time?**

\[
\frac{2}{5} \div \frac{1}{5} = A
\]

\[
\frac{2}{3} \div \frac{3}{4} = C
\]

\[
\frac{2}{8} \div \frac{3}{6} = D
\]

\[
\frac{3}{6} \div \frac{4}{3} =
\]

3. **Why did the dog want to become a surgeon?** He was a ________________.

\[
\frac{3}{9} \div \frac{6}{9} = B
\]

\[
\frac{3}{7} \div \frac{3}{2} = \frac{2}{25} \div \frac{2}{5} =
\]

\[
\frac{3}{6} \div \frac{3}{4} = H
\]

\[
\frac{2}{7} \div \frac{5}{7} =
\]

\[
\frac{7}{35} \div \frac{2}{7} = D
\]

\[
\frac{8}{9} \div \frac{4}{2} =
\]
Solve each inequality. Round to the nearest hundredth, if necessary.

1. \(10x + 4 \geq -6\) 

2. \(-3x - 21 > 16\) 

3. \(\frac{x}{2} + 1 \geq \frac{41}{2}\) 

4. \(\frac{x}{5} + 11 < 15\) 

5. \(1.5x - 2 \leq 16\) 

6. \(0.2 > -1.2x - 5.1\)

Solve each inequality. Then graph the solution set.

7. \(-5x - 17 \leq 38\) 

8. \(42 < -\frac{y}{9} + 30\)

9. Dominique has $5.00. Bagels cost $0.60 each and a small container of cream cheese costs $1.50.
   a. How many bagels can Dominique buy if she also buys one small container of cream cheese? Explain your answer.

b. Graph the solution set.

Yasmine and Alex each have $200 to spend on clothes. Use the table for 10–11.

10. Yasmine decides to purchase a jacket and some long-sleeve shirts. How many long-sleeve shirts can she buy?

<table>
<thead>
<tr>
<th>Item</th>
<th>Price ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-sleeve shirt</td>
<td>15</td>
</tr>
<tr>
<td>Long-sleeve shirt</td>
<td>20</td>
</tr>
<tr>
<td>Pair of jeans</td>
<td>30</td>
</tr>
<tr>
<td>Jacket</td>
<td>50</td>
</tr>
</tbody>
</table>

11. Alex wants to buy a jacket, 2 long-sleeve shirts, and some short-sleeve shirts. Can she buy at least 8 short-sleeve shirts? Explain.
PRACTICE

Use the problem-solving steps to help you.

1. Pierre can spend no more than $49 on lunch for the art club. If sandwiches cost $3 each and Pierre spends a total of $13 on drinks, how many sandwiches can he buy?

CHECKLIST
- READ
- PLAN
- SOLVE
- CHECK

2. A farmer can spend up to $30,000 on farm equipment. He buys a tractor for $7,500. He also needs to buy storage bins that cost $2,500 each. How many storage bins can the farmer buy?

CHECKLIST
- READ
- PLAN
- SOLVE
- CHECK

3. Marcy must score an average of at least 90% between her two exams to make the math honor roll. If she scores a 94% on one of the exams, what score can she get on the other exam to make the math honor roll?

CHECKLIST
- READ
- PLAN
- SOLVE
- CHECK
Khan Skill Tracker for ____________________________

Directions: Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
1. You would most likely measure the width of a swimming pool in:
   a. cm  b. m  c. mm  d. km

2. Write the smallest possible number using the digits 4, 2, 8, 9, and 1. ______________

3. Do the shaded shapes to the right have the same perimeter?  Circle: Yes or No

4. \((-8)^2 - 5 =\)

5. Which shape below shows an obtuse angle? _______
   a.  b.  c.

6. Complete the sequence: 4.8, 5.4, 6.0, ______, ______.

7. Circle three numbers below that have a sum of 7.
   \(-6\)  3  5  0  8

For Problems 8–10, use the graph to the right.

8. Which day of the week was the warmest? ______________

9. Which day of the week had the narrowest gap between the high and low temperatures? ______________

10. Which of these would be closest to the mean high temperature for the week?
    a. 90°  b. 40°
    c. 70°  d. 80°
Square Madness

Compare the decimals and write the larger decimal in the puzzle. The decimal point will occupy one space. Each number can occupy only one place to make the whole puzzle fit together perfectly. Two numbers have been given to get you started.

9.09 < 9.18  18.3 > 18.03  31.8   30.4  54.1    54
9.09 < 9.18  18.3 > 18.03  31.8   30.4  54.1    54
0.8   0.82  29.5   28.5  3.57    3.55  8.31    8.30
6.71   6.75  41.05  41.5  0.009   0.09  5.20    5.10
1.09   1.08  9.33   9.36  21.45  21.5  3.22    3.12
7.91   7.90  0.102  0.12  0.73    0.71  93.4    93.0

9 . 1 8
1     8
1
8
3
The scale of a room in a blueprint is 3 in:5 ft. A wall in the same blueprint is 18 in. Complete the table.

<table>
<thead>
<tr>
<th>Blueprint length (in.)</th>
<th>3</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual length (ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. How long is the actual wall? ____________

b. A window in the room has an actual width of 2.5 feet. Find the width of the window in the blueprint. ____________

2. The scale in the drawing is 2 in.:4 ft. What are the length and width of the actual room? Find the area of the actual room.

7 in. 14 in.

3. The scale in the drawing is 2 cm:5 m. What are the length and width of the actual room? Find the area of the actual room.

6 cm 10 cm

4. In the scale drawing below, assume the rectangle is drawn on centimeter grid paper. The scale is 1 cm:4 m.

a. Redraw the rectangle on centimeter grid paper using a scale of 1 cm:6 m.

b. What is the actual length and width of the rectangle using the original scale? What are the actual dimensions using the new scale?
PRACTICE

Use the problem-solving steps to help you. Use a ruler when needed.

1. Dylan plans to make a large triangular flag to support his favorite sports team. What are the side lengths of the actual flag?

   Scale: 1 cm = 1.5 m

2. The scale drawing shows a square poster that Kayla designed. What is the perimeter of the poster?

   Scale: 1 cm = 1 ft

   I remember! The perimeter of a figure is the sum of its side lengths.

3. Hector wants to enclose a pen for his two dogs with a fence. How many feet of fencing will he need for his pen?

   Scale: ½ in. = 5 ft
Name: ____________________

Khan Skill Tracker for ____________________

Directions: Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
1. What relationship do the arrows represent in the diagram?

2. What fraction of the total shape is shaded?

3. If \(3! = 3 \cdot 2 \cdot 1\), what does \(4!\) equal?
   a. 6  
   b. 12  
   c. 24  
   d. 120

4. Which of these is an equilateral triangle?
   a.  
   b.  
   c.  
   d.  

5. Which shape in Problem 4 is a right triangle?

For Problems 6–7, use the pie chart to the right.

6. Shade 25% of the pie chart.

7. If six slices of the pie chart were shaded, what percent would that represent?

For Problems 8–10, use the graph to the right.

8. In which quadrant would the point \((3, 3)\) be?

9. In which quadrant would the point \((-2, -5)\) be?

10. Does the line have a positive slope or a negative slope?
Decimals: Multiply a Decimal by a Whole Number

Name ______________________ Date ______________________

Dialing for Answers

How much does an elephant charge for a circus performance?
Find out the answer by solving each puzzle and replacing the number in the ones place with the letter from the telephone code. Then write the letters on the dotted lines. The first one has been done for you.

1. 13.7  x  8 = 109.6  P
2. 13.2  x  4 = 37.5
3. 37.5  x  12 =

4. 19.11 x  18 =
5. 21.03 x  24 =
6. 46.4  x  6 =

7. 30.45 x  15 =

8. 2.35 x  5 =
9. 64.2  x  6 =
10. 45.8  x  2 =
11. 35.15 x  15 =

What weighs more than a ton and carries a trunk wherever it goes?

8. 2.35 x  5 =
9. 64.2 x  6 =
10. 45.8 x  2 =
11. 35.15 x  15 =

8 9 10 11
Find the surface area of each figure.

1. 

3. Carla is wrapping a present in the box shown below. Find the amount of wrapping paper she needs, not counting overlap.

4. Henry plans to cover the box shown below in contact paper without any overlap. How many square centimeters will be covered with contact paper?

5. To find the surface area of a triangular prism use the formula $S = 2B + Ph$. $B$ is the area of the base, $P$ is the perimeter of the bases, and $h$ is the height of the prism.
   a. The height of the prism is ______ ft.
   b. The area of the base is ______ ft$^2$.
   c. The perimeter of the base is ______ ft.
   d. Fill in the formula. $S = 2 \cdot$ __________ + __________
   e. The surface area of the triangular prism is _________ ft$^2$.

Find the surface area of each composite figure.

6. 

7. 

Unit 5 126 Lesson 4
Miguel plans to paint a wood deck. He needs to buy the correct amount of paint. What is the area of the deck? If one can of paint covers 250 square feet, how many cans of paint should Miguel buy?

Isabel wants to make a new cover for her tent. How much material does she need? If the material costs $22.00 per square meter, how much will it cost Isabel to make the cover?

Oliver built a mailbox and wants to know exactly how much it can hold. What is the total volume of the mailbox?
Name: __________________________

**Khan Skill Tracker for __________________________**

**Directions:** Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
1. If it is 10:46 a.m., how many minutes until noon? _____

2. Mark has a string that is six feet long. If he cuts it in half and then cuts each half in half, how long will each piece be? _____

For Problems 3–6, circle three items that are of equal value.

3. $3^3$, $3 \times 3$, 27, 9, $3 \times 3 \times 3$

4. $100$, $\frac{1,000}{10}$, 10, $10^2$, $10 \times 10 \times 10$

5. Hexagon, Pentagon

6. $1.265 \times 10^2$, $0.1265 \times 10^3$, $12.65 \times 10^1$, $1.265 \times 10^3$, $0.1265 \times 10^4$

7. If Jerome walks 1.6 miles to school each day, how long is the round-trip? _____

8. How many legs do six chickens and four cows have in total? _____

9. Fill in the missing squared numbers.

| 1 | 4 | 9 | 16 |  |  |  |  |

10. NET is to TEN as 304 is to:
    a. 340        b. 430        c. 403        d. 304
Brain Rattler

Ready for a brain-rattling number game? Cut out the game pieces from around the game board and place them on the game board in the order shown in the box at the bottom of the page. Then, move the game pieces until each horizontal row has an equivalent decimal, percent, and fraction (in lowest terms). You may move only one piece at a time into the empty circle. You may move vertically, horizontally, or diagonally.
1. A ticket to a play costs $50. There is a 5% transaction fee. What is the total cost of the ticket?

2. A taxi ride costs $32. Paulie gives the driver a 15% tip. What is the total amount Paulie gives the driver?

3. Emily earns $75 per day plus a commission. Her commission is 15%. She sells $600 worth of furniture. How much does she earn for the day?

4. Martin finds a shirt for $20 at a store. The sign says it is 10% off the original price. Martin must also pay 8.5% sales tax. What is the cost of the shirt before and after the sales tax?

5. Joe borrowed $2,000 from the bank at a rate of 7% simple interest per year. How much interest did he pay in 5 years?

6. You have $550 in a savings account that earns 3% simple interest each year. How much will be in your account in 10 years?

7. **Error Analysis** A store makes a profit of $1,000 in January. In February sales are up 25%, but in March sales are down 25%. The store manager says that the profit for March is still $1,000. What is his error? What is the actual profit for March?

8. Percent error calculations are used to determine how close to the true values, or how accurate, experimental values really are. The formula is similar to finding percent of change.

   \[
   \text{percent error} = \frac{\text{amount of change}}{\text{actual value}} \times 100
   \]

   In chemistry, Bob records the volume of a liquid as 13.3 ml. The actual volume is 13.6 ml. What is his percent error? Round to the nearest percent.

9. Complete the table.

<table>
<thead>
<tr>
<th>Item</th>
<th>Scooter</th>
<th>Bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Price</td>
<td>$45</td>
<td>$110</td>
</tr>
<tr>
<td>New Price</td>
<td>$56</td>
<td>$96</td>
</tr>
<tr>
<td>Percent Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase or Decrease</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PRACTICE
Use the problem-solving steps to help you.

1. Carmen buys a book that is discounted 50%. A tax of 6% is added to the sale price. The book originally cost $14. If Carmen gives the cashier $10, how much change will she get back?

2. Tyrese’s breakfast costs $9. A tax of 4% is added to the bill. He wants to leave 15% of the cost of the breakfast (without tax) as the tip. Find the total cost of Tyrese’s breakfast with tax and tip. If he pays with a $20 bill, what will be his change?

3. Gloria wants to buy a basketball jersey that originally cost $30. Last week, the price of the jersey went up 40%. This week, the jersey is on sale for 30% off. Find the price of the jersey this week.
Name: ________________________

Khan Skill Tracker for ________________________

Directions: Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems
1. On Tuesday, Joe lost $10. On Wednesday, he made $5. On Thursday, he made $4. Did he make or lose money over those three days? __________

2. \(-3(4 + -3) = \)

3. Original price: $100  New Price: $72  What is the % decrease? ______

4. When dividing fractions, you must flip the _____ fraction over and then multiply the resulting fractions. Circle: first or second

5. \(\left[ \frac{3}{8} \right] \left[ \frac{-5}{7} \right] = \)

6. Which one of the following is equal to 12%?
   a. \(\frac{12}{100}\)  b. \(\frac{6}{50}\)  c. 0.12  d. 0.012

7. Write using exponents: \(4^2 \cdot 4 \cdot 4 \cdot 4 = \)

8. \(|-15| = \)

9. How many halves are in 13? ______

10. What is the perimeter of this regular pentagon if each side is 1.3 inches? ______
**Shop Until You Drop**

Look at the advertisement below. Everything at Ohmigolly Clothing Store is a fantastic ten percent off. After the discount was taken, Amelia spent exactly one hundred dollars for four items (before taxes). One of the items she bought has been circled below. Put a ring around the other three items she bought. Hint: Total the items first and then figure out the discount.

<table>
<thead>
<tr>
<th>Ohmigolly Clothing Store’s Holiday Extravaganza Sale</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHENILLE SCARVES</strong></td>
<td><strong>Handbags</strong></td>
<td><strong>MOHAIR SWEATER</strong></td>
</tr>
<tr>
<td>in your favorite holiday colors.</td>
<td>Value Priced</td>
<td>Make every occasion</td>
</tr>
<tr>
<td>Value Priced at $15.99</td>
<td>Only $9.99</td>
<td>special with a beaded</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>MOHAIR SWEATER</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Was $50.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Now $32.99</td>
</tr>
<tr>
<td><strong>Velvet</strong> miniskirts in black, red, or white.</td>
<td><strong>DIAMOND-STUDDED</strong></td>
<td><strong>Black leather gloves at a</strong></td>
</tr>
<tr>
<td></td>
<td><strong>WACHES</strong></td>
<td>special holiday price.</td>
</tr>
<tr>
<td></td>
<td>$59.99</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Perfect</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Holiday Gift</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Only $50.14</td>
<td></td>
</tr>
<tr>
<td><strong>CREAMY WHITE SILK BLOUSE</strong></td>
<td><strong>Hair Accessories</strong></td>
<td><strong>Holiday Jewelry</strong></td>
</tr>
<tr>
<td></td>
<td>Your Choice</td>
<td>Your Choice</td>
</tr>
<tr>
<td></td>
<td>$5.00</td>
<td>Only $14.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regular Prices</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$20-$50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What savings!</td>
</tr>
<tr>
<td><strong>Just $29.99</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perfect for holiday parties!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Party Dresses</td>
<td><strong>Shoes, Shoes, Shoes</strong></td>
<td></td>
</tr>
<tr>
<td>Many styles from which to choose.</td>
<td>All styles and colors now at</td>
<td></td>
</tr>
<tr>
<td><strong>FOR THIS WEEK ONLY!</strong> $89.00</td>
<td>this amazing low price.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>One Day Only</strong></td>
<td><strong>$48.00 a pair</strong></td>
</tr>
<tr>
<td></td>
<td>$199.99</td>
<td></td>
</tr>
</tbody>
</table>
Find the area of each circle to the nearest tenth, if necessary. Use 3.14 for $\pi$.

1.  
   \[
   \text{14 m}
   \]

2.  
   \[
   \text{12 mm}
   \]

3.  
   \[
   \text{20 yd}
   \]

4.  
   \[
   \text{5 ft}
   \]

5.  
   \[
   \text{6.4 cm}
   \]

6.  
   \[
   \text{8.25 in.}
   \]

7. A clock face has a radius of 8 inches. What is the area of the clock face? Round your answer to the nearest hundredth.

8. A DVD has a diameter of 12 centimeters. What is the area of the DVD? Round your answer to the nearest hundredth.

9. A company makes steel lids that have a diameter of 13 inches. What is the area of each lid? Round your answer to the nearest hundredth.

10. A circular garden has an area of $64\pi$ square yards. What is the circumference of the garden? Give your answer in terms of $\pi$.

11. **Reasoning** A small silver dollar pancake served at a restaurant has a circumference of $2\pi$ inches. A regular pancake has a circumference of $4\pi$ inches. Is the area of the regular pancake twice the area of the silver dollar pancake? Explain.

12. **Critical Thinking** Describe another way to find the area of a circle when given the circumference.
PRACTICE

Use the problem-solving steps to help you. Use 3.14 for \(\pi\).

1. Brad is replacing the topsoil in the community garden. If the area he is replacing is in the shape of a half circle with a diameter of 30 dm, how many square decimeters of the garden will he replace?

2. The diameter of a basketball hoop is 18 inches. What is the largest circumference of a basketball that will fit through the hoop? Show your work.

3. A circular window frame has a diameter of 22 inches. The glass window inside the frame has a radius of 10 inches. What is the area of the window frame not including the glass?
Name: ______________________

Khan Skill Tracker for ______________________

Directions: Use the work space below to record relevant notes, questions and work for this Khan Skill. Points will be awarded for the following:

- Notes from Video
- Written Examples from Video
- Work from Practice Problems