GRADE 3 MATH PRACTICE WORKBOOK
KIPP Nashville 3rd Grade Elementary Math

Adapted from Achievement First.
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Practice Workbook A

1. Find the area of the shape below. __________________

2. Find the area of the shape below. __________________

3. Find the area of the shape below. __________________

4. Find the area of the shape below. __________________

5. Circle the shape that has an area of 9 square units.

Find the area of the shape below. _______________

Find the area of the shape below. _______________

Circle the shape that has an area of 8 square units.

6. Find the area of the shape below. _______________

7. Find the area of the shape below. _______________

8. Find the area of the shape below. _______________
9. Find the area of the shape below. ________________

10. Circle the shape that has an area of five square units.

11. Find the area of the shape below. ________________

12. Find the area of the shape below. ________________

13. Find the area of the shape below. ________________
14. Find the area of the shape below. __________________

15. Find the area of the shape below. __________________

16. Find the area of the shape below. __________________
17. Find the area of the shape below. ______________

Area: _____
3.MD.C.7a – Find the area of a rectangle with whole-number side lengths by tiling it, and showing that the area is the same as would be found by multiplying side lengths.

1. Find the area of the square by filing in the missing tiles.
   
   Area = __________

2. Find the area by filling in the missing tiles.
   
   Area = __________

3. Use tiling to help you find the area.
   
   Area = __________

   12 cm

   4 cm
Find the area of the shaded shape by filling in the missing tiles.

\[ \text{Area} = \underline{\hspace{2cm}} \]

4. Use tiling to find the area.

\[ \begin{array}{c}
9\text{in} \\
3\text{in}
\end{array} \]

\[ \text{Area} = \underline{\hspace{2cm}} \]

Find the area of the shaded shape.

\[ \text{Area} = \underline{\hspace{2cm}} \]

Find the area by filling in the missing tiles.

\[ \text{Area} = \underline{\hspace{2cm}} \]
6. Use tiling to find the area.

   4 centimeters

   7 centimeters

   Area = ___________

7. The counter in the bathroom covers the tile on the floor shown below. How many tiles are on the floor, including the tiles under the counter?

   Each □ represents a 1-cm square.

   Draw to find the number of rows and columns in the array. Then fill in the blanks to make a true equation.

   _______ x _______ = _______ sq cm

8. Use tiling to find the area.

   Area = ___________
9. Gabrielle spilled some coffee on her carpet. She decides to cover the spill with a rug. How many tiles is she covering up?

Answer = ___________

Do these shapes have the same area?

10. Shape A

Area: _______

Shape B

Area: _______

Answer = ___________

11. Use tiling to find the area.

Area = ___________

12. Use tiling to find the area.

Area = ___________

13. Use tiling to find the area.

Area = ___________
14. Find the area by filling in the missing tiles.

Area = __________

15. Find the area by filling in the missing tiles.

Area = __________

16. Find the area by filling in the missing tiles.

Area = __________

17. Use tiling to help you find the area of the shaded figure.

Area = __________

18. Use tiling to help you find the area of this 4 cm x 4 cm square.

Area = __________
3.OA.A.4 – Determine the unknown whole number in a multiplication or division equation relating three whole numbers.

1. Fill in the missing number.
   
   4 groups of _____ equal 12.

2. Fill in the missing number.
   
   _____ ÷ 2 = 9

3. Fill in the missing number

   20 ÷ _____ = 4

4. Fill in the missing number.

   42 ÷ _____ = 7

5. Fill in the missing number.

   6 x _____ = 42
6. Fill in the missing number.

$$12 \div \underline{\hspace{1cm}} = 6$$

7. Fill in the missing number.

$$4 \text{ groups of } \underline{\hspace{1cm}} \text{ equals } 16$$

8. Fill in the missing number.

$$\underline{\hspace{1cm}} \text{ groups of } 5 \text{ equals } 25$$

9. Fill in the missing number.

$$12 \times \underline{\hspace{1cm}} = 60$$

10. Fill in the missing number.

$$\underline{\hspace{1cm}} \times 12 = 24$$

11. Fill in the missing number.

$$7 \text{ groups of } 6 = \underline{\hspace{1cm}}$$
12. Fill in the missing number.

6 groups of ____ equals 18

13. Fill in the missing number.

9 x ____ = 63

14. Fill in the missing number.

10 x ____ = 90

15. Fill in the missing number.

3 x ____ = 24

16. Fill in the missing number.

5 groups of ____ equals 15

17. Fill in the missing number.

10 groups of ____ equals 40

18. Fill in the missing number.

4 x ____ = 24
19. Fill in the missing number.

___ groups of 8 equals 56

20. Fill in the missing number.

2 groups of ____ equal 8

21. Fill in the missing number.

7 groups of ____ equals 21

22. Fill in the missing number.

____ x 5 = 10

23. Fill in the missing number.

10 groups of ____ equals 90

24. Fill in the missing number.

_____ groups of 7 equals

25. Fill in the missing number.

8 x _____ = 16
26. Fill in the missing number

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1 x 9 =</td>
<td>2 x 4 =</td>
<td>9 x 4 =</td>
</tr>
<tr>
<td>9 ÷ 3 =</td>
<td>7 x 8 =</td>
<td>16 ÷ 8 =</td>
</tr>
<tr>
<td>15 x 1 =</td>
<td>5 x</td>
<td>15</td>
</tr>
<tr>
<td>2 x 7 =</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 x 6 =</td>
<td></td>
<td>1 x 8</td>
</tr>
<tr>
<td>12 ÷ 6 =</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 x 7</td>
<td>4 ÷ 2</td>
<td>21 ÷ 7</td>
</tr>
<tr>
<td>3 x 9</td>
<td>7 x</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>10 x 9</td>
<td></td>
</tr>
<tr>
<td>6 x 8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
27. Fill in the missing number

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$1 \times 7 = $</td>
<td>$3 \times 4 = $</td>
<td>$6 \times 4 = $</td>
</tr>
<tr>
<td>$24 \div 3 = $</td>
<td>$6 \times 3 = $</td>
<td>$32 \div 8 = $</td>
</tr>
<tr>
<td>$5 \times 4 = $</td>
<td>$3 \times $</td>
<td>$4 \times 7 = $</td>
</tr>
<tr>
<td>$8 \times 5 = $</td>
<td>$= 0 \times 8$</td>
<td>$36 \div 6 = $</td>
</tr>
<tr>
<td>$= 8 \times 9$</td>
<td>$= 40 \div 5$</td>
<td>$= 28 \div 7$</td>
</tr>
<tr>
<td>$= 4 \times 8$</td>
<td>$7 \times $</td>
<td>$= 10 \times 6$</td>
</tr>
<tr>
<td>$3 \times 9 = $</td>
<td>$= 54 \div 9$</td>
<td>$7 \times 8 = $</td>
</tr>
</tbody>
</table>
28. Fill in the missing number

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5 \times 9 = ______</td>
<td>8 \times 4 = ______</td>
<td>12 \times 2 = ______</td>
</tr>
<tr>
<td>12 \div 3 = ______</td>
<td>6 \times 9 = ______</td>
<td>48 \div 8 = ______</td>
</tr>
<tr>
<td>5 \times 6 = ______</td>
<td>6 \times ______ = 42</td>
<td>8 \times 9 = ______</td>
</tr>
<tr>
<td>9 \times 4 = ______</td>
<td>______ = 6 \times 7</td>
<td>24 \div 6 = ______</td>
</tr>
<tr>
<td>______ = 7 \times 7</td>
<td>______ = 56 \div 8</td>
<td>______ = 35 \div 7</td>
</tr>
<tr>
<td>______ = 9 \times 2</td>
<td>11 \times ______ = 33</td>
<td>______ = 11 \times 9</td>
</tr>
<tr>
<td>8 \times 8 = ______</td>
<td>______ = 81 \div 9</td>
<td>7 \times 4 = ______</td>
</tr>
</tbody>
</table>
3.NBT.A.3 – Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.

1. 2 × 90 =

2. 3 × 30 =

3. 4 × 10 =

4. 5 × 20 =

5. 6 × 30 =
6. 8 \times 20 =

7. 4 \times 80 =

8. 9 \times 90 =

9. 10 \times 5 =

10. 60 \times 2 =

11. 70 \times 3 =
12. $50 \times 6 = $

13. $4 \times 70 = $

14. $80 \times 5 = $

15. $70 \times 2 = $

16. $10 \times 4 = $

17. $60 \times 4 = $
18. 3 x 20 = 

19. 5 x 90 = 

20. 70 x 8 = 

21. 3 x 10 = 

22. 50 x 3 = 

23. 90 x 8 =
24. \( 8 \times 80 = \) 

25. \( 7 \times 70 = \) 

26. Fill in the missing number.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(10 \times 9 = )</td>
<td>(10 \times 4 = )</td>
<td>(8 \times 10 = )</td>
</tr>
<tr>
<td>(90 \times 9 = )</td>
<td>(10 \times 7 = )</td>
<td>(60 \times 4 = )</td>
</tr>
<tr>
<td>(10 \times 1 = )</td>
<td>(10 \times )</td>
<td>(20 \times 7 = )</td>
</tr>
<tr>
<td>(90 \times 6 = )</td>
<td>()</td>
<td>(20 \times 2 = )</td>
</tr>
<tr>
<td>()</td>
<td>(= 90 \times 7)</td>
<td>(= 40 \times 4)</td>
</tr>
<tr>
<td>()</td>
<td>(= 30 \times 9)</td>
<td>(7 \times )</td>
</tr>
<tr>
<td>(70 \times 6 = )</td>
<td>()</td>
<td>(= 80 \times 3)</td>
</tr>
</tbody>
</table>
3.OA.A.1 – Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each.

Write a multiplication sentence to describe the array.

1. Complete the multiplication sentence so that it describes the array.

$$\_\_\_ x 3 = 9$$

3. Write a multiplication sentence to describe the array.
4. Write a multiplication sentence to describe the model.

5. Complete the multiplication sentence that describes the model.

\[ \_ \times 4 = 16 \]

6. Complete the multiplication sentence so that it describes the array.

\[ \_ \times 3 = 18 \]

7. Write a multiplication sentence to describe the array.
8. Write a multiplication sentence to describe the array.

9. Write a multiplication sentence to describe the array.

10. Write a multiplication sentence to describe the array.

11. Write a multiplication sentence to describe the array.

12. Write a multiplication sentence to describe the array.

13. Write a multiplication sentence to describe the array.
14. Write a multiplication sentence to describe the array.

15. Write a multiplication sentence to describe the array.

16. Write a multiplication sentence to describe the array.

17. Write a multiplication sentence to describe the array.

18. Write a multiplication equation to describe the model.
19. Write a multiplication equation to describe the array.

\[
\begin{array}{c|c|c}
\text{ } & \text{ } & \\
\text{ } & \text{ } & \\
\text{ } & \text{ } & \\
\text{ } & \text{ } & \\
\end{array}
\]

20. Write a multiplication sentence to describe the model.

21. Write a multiplication sentence to describe the model.
22. Write a multiplication equation to describe the model.

23. Write a multiplication equation to describe the model.

24. Write a multiplication equation to describe the model.

25. Write a multiplication sentence to describe the model.
26. Write a multiplication equation to describe the model.

27. Write a multiplication equation to describe the array.
3.OA.A.2 – Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned into equal shares of 8 objects each.

1. Write a division sentence to describe the model.

2. Fill in the blanks to describe the model.

   There are 16 dots divided into 2 equal groups.
   There are ______ dots in each group.
   So, 16 ÷ 2 = _____

3. Fill in the blanks to describe the model.

   There are 9 dots divided into 3 equal groups.
   There are _____ dots in each group.
   So, 9 ÷ 3 = _____
4. Write a division equation to describe the model.

5. Write a division equation to describe the model.

6. Fill in the blanks to describe the array.

There are 36 triangles with 9 triangles in each row.
There are _____ rows of triangles.
So, 36 ÷ 9 = ____.
7. Write a division equation to describe the model.

8. Write a division equation to describe the array.

9. Write a division sentence to describe the model.

10. Write a division equation to describe the model.
11. Write a division equation to describe the model.

12. Write a division equation to describe the model.

13. Write a division equation to describe the model.

14. Write a division equation to describe the model.
15. Write a division equation to describe the model.

16. Write a division equation to describe the array.

17. Write a division sentence to describe the array.

18. Write a division sentence to describe the array.
19. Write a division sentence to describe the array.

20. Write a division sentence to describe the array.

21. Write a division sentence to describe the array.

22. Write a division sentence to describe the array.

23. Write a division sentence to describe the array.
24. Write a division sentence to describe the array.

```
  
  
  
  
```

25. Write a division sentence to describe the array.

```
  
  
  

  
```

26. Write a division sentence to describe the array.

```
  
  
  
  
  
  
  

  
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27. Write a division sentence to describe the array.

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```

```
3.NBT.A.1 – Use place value understanding to round whole numbers to the nearest 10 or 100.

1. What is 748 rounded to the nearest hundred? _____

2. What is 39 rounded to the nearest ten? _____

3. The digits in a certain number are 8 and 6. The number rounds to 70 when rounded to the nearest ten. What is the number? _____

4. Susie is thinking of a number. Her number is double the largest number that rounds to 40 when rounding to the nearest ten. What is Susie’s number? _____

5. The digits in a certain number are 4 and 6. To the nearest ten, the number rounds to 60. What is the number? _____
6. List all of the numbers that round 70 when rounding to the nearest ten

_________________________________________

7. Round 602 to the nearest ten. _____

8. What is 345 rounded to the nearest hundred? _____

9. What is 99 rounded to the nearest ten? _____

10. List all the numbers that round to 120 when rounding to the nearest ten.

_________________________________________
11. Write two numbers that round to 200 when rounding to the nearest hundred.

____________________________

12. What is 679 rounded to the nearest hundred? _____

13. List 5 numbers that round to 700 when rounding to the nearest hundred.

____________________________

14. What is 63 rounded to the nearest ten? _____

15. What is 823 rounded to the nearest ten? Nearest hundred? _____________
16. What is the largest number that will round to 400 when rounding to the nearest hundred?

_________________________________________

17. Write 5 numbers that round to 700 when rounding to the nearest hundred.

_________________________________________

18. Round 210 to the nearest ten. _______

19. What is 67 rounded to the nearest ten? Nearest hundred? ____________

20. List all the numbers that round to 40 when rounding to the nearest ten.

_________________________________________
21. What is 809 rounded to the nearest ten? __________

Nearest hundred? ______________

22. List 5 numbers that round to 600 when rounding to the nearest hundred.

________________________________________

23. List all the numbers that round to 10 when rounding to the nearest ten.

________________________________________

24. What is 254 rounded to the nearest ten? ______________

Nearest hundred? ______________

25. What is the largest number that will round to 500 when rounding to the nearest hundred?

________________________________________
3.NBT.A.2 – Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

1. $979 + 210 = \underline{1189}$

2. $303 - 165 = \underline{138}$

3. 

$$
\begin{array}{c}
582 \\
-416 \\
\hline
\end{array}
$$

4. 

$$
\begin{array}{c}
307 \\
-166 \\
\hline
\end{array}
$$

5. $870 = 89 + \underline{781}$
6. 

\[
\begin{array}{c}
\ 269 \\
+ \ 653 \\
\end{array}
\]

7. \(823 + \_\_\_\_\_\_\_ = 908\)

8. 

\[
\begin{array}{c}
\ 460 \\
+ \ 532 \\
\end{array}
\]

9. \(56 + \_\_\_\_\_\_\_ = 459\)

10. \_\_\_\_\_\_\_ - 432 = 189
11. Calculate.

<table>
<thead>
<tr>
<th>605</th>
<th>708</th>
<th>875 - 218 = ____</th>
</tr>
</thead>
<tbody>
<tr>
<td>-327</td>
<td>-439</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>575 + 219 = ____</th>
<th>238</th>
<th>117 + 582</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+573</td>
<td></td>
</tr>
</tbody>
</table>

12. Calculate.

<table>
<thead>
<tr>
<th>673</th>
<th>433</th>
<th>745 - ____ = 196</th>
</tr>
</thead>
<tbody>
<tr>
<td>-137</td>
<td>-182</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>515 + ____ = 729</th>
<th>763</th>
<th>442 + 328</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+256</td>
<td></td>
</tr>
</tbody>
</table>
13. 670 – 487 = ______

14. 

\[
\begin{array}{c}
800 \\
-419 \\
\end{array}
\]

15. 450 - ______ = 373

16. 

\[
\begin{array}{c}
477 \\
+392 \\
\end{array}
\]

17. 

\[
\begin{array}{c}
98 \\
-43 \\
\end{array}
\]
18. \(806 - \_\_\_\_\_\_\_\_ = 247\)

19. \(89 + 320 = \_\_\_\_\_\_\_\_\_\_\_\)

20. \[
\begin{array}{c}
66 \\
+ 25 \\
\hline
\end{array}
\]

21. \[
\begin{array}{c}
806 \\
- 282 \\
\hline
\end{array}
\]

22. \[
\begin{array}{c}
40 \\
- 28 \\
\hline
\end{array}
\]
23. $346 + \underline{\hspace{2cm}} = 500$

24. $56 + 78 = \underline{\hspace{2cm}}$

25. $91 - 67 = \underline{\hspace{2cm}}$

26. $510 - \underline{\hspace{2cm}} = 276$

27. $678 + 190 = \underline{\hspace{2cm}}$
28. Calculate.

<table>
<thead>
<tr>
<th>903</th>
<th>922</th>
<th>721 - 238 = ____</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 465</td>
<td>- 573</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>495 + 129 = ____</th>
<th>243 + 713</th>
<th>317 + 458</th>
</tr>
</thead>
</table>

29. Solve to find the missing numbers.

142 + _______ = 225

506 − _______ = 329

_______ + 344 = 764

30. Solve to find the missing numbers.

463 + _______ = 925

801 − _______ = 378

_______ + 492 = 964
3.MD.A.1 – Understand time to the nearest minute.

What time is on the clock?

___ : ___

1. Bessie is writing her paper. She starts writing it at 9:10. She writes for 34 minutes. What time does she finish writing?

End time: ___ : ___

2. Show 10:35 on the clock.

3. Show ten minutes past 6:15 on the clock.

4. Show 7:03 on the clock.
5. What time is on the clock?

___ ___ : ___ ___


7. Kim is practicing for her talent show. She spends 47 minutes practicing. When she finishes practicing, the clock reads 8:50. What time did she start?

Start Time: ___ ___ : ___ ___

8. Show 12: 42 on the clock.

9. Jamie left for practice at 10:43. Draw the time he left on the clock.
10. What time is on the clock?

___ : ___

11. Show a quarter past 5 on the clock.

12. What time is shown on the clock? ________

13. Independent Reading starts at 1:34 p.m. It ends at 1:56 p.m.

Draw the start time on the clock below. Draw the end time on the clock below.

![Clock showing 6:17]

15. End Time – 3:40

Elapsed Time – Count backward 36 minutes.

**Start Time** -

![Clock showing 3:04]

16. What time is shown on the clock? _________

![Clock with hands pointing to 3:04]

17. Label the times given below on the number line. Then, draw hands on the clock faces to show the same times.

**Time A = 6:33**

**Time B = 6:19**

![Number line with labeled times and clock faces showing 6:33 and 6:19]
18. What time is shown on the clock? ______________


20. Show half an hour past 8:06 on the clock.

21. What time is shown on the clock? ______

22. Show 7:19 on the clock.
23. Show 50 minutes past 2:30 on the clock.

24. What time is shown on the clock?
Practice Workbook C

3.MD.A.2 – Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.

1. How much juice is in the jug? __________

2. Which is a better estimate for the weight of a bouncy ball?
   - 3 kilograms
   - 3 grams

3. Which is a better estimate for the weight of a business card?
   - 7 kilograms
   - 7 grams

4. The weight of the cat is 6 kilograms. What is the weight of one dog? __________
5. Which is a better estimate for the volume of a kitchen pot?

7 liters  7 milliliters

6. What is the volume of liquid in the beaker? __________

7. Which is a better estimate for the weight of a twig?

11 grams  11 kilograms

8. Which is a better estimate for the volume of a medicine syringe?

2 liters  2 milliliters

9. What is the mass of the object? __________

10. Which is a better estimate for the weight of a pigeon?

2 grams  2 kilograms
11. Which is a better estimate for the weight of a birthday cake?

1 gram

1 kilogram

12. How much water was used for the plants? ______________

13. Which is a better estimate for the height of a city building?

40 meters

40 centimeters

14. What is the mass of the object? _______

15. Which is a better estimate for the volume of a water bottle?

275 liters

275 milliliters
16. What is the mass of the object? ________

17. Which is a better estimate for the volume of medicine cup?
   - 11 milliliters
   - 11 liters

18. Which is closest to the mass of a stapler?
   - a. 15 grams
   - b. 25 grams
   - c. 65 grams
   - d. 75 grams

19. Which is a better estimate for the volume of a pasta box?
   - 3 milliliters
   - 3 liters

20. How much does one rectangle weigh? iv ___________________________
21. Which is a better estimate for the volume of a pepper shaker?

48 liters

48 milliliters

22. Which is a better estimate for the volume of a shoebox?

4 milliliters

4 liters

23. What is the volume of liquid? ________

24. What is the volume of liquid? ________
Practice Workbook D

3.G.A.2 – Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

1.
A beaker is considered full when the liquid reaches the fill line shown near the top. Estimate the amount of water in the beaker by shading the drawing as indicated. The first one is done for you.

\[
\begin{align*}
\text{1 half} & \quad \text{1 fourth} & \quad \text{1 third} \\
\end{align*}
\]

2.
Juanita cut her string cheese into equal pieces as shown in the rectangles below. In the blanks below, name the fraction of the string cheese represented by the shaded part.

\[
\begin{align*}
\text{\ } & \quad \text{ } \\
\end{align*}
\]

\[
\begin{align*}
\text{\ } & \quad \text{ } \\
\end{align*}
\]

\[
\begin{align*}
\text{\ } & \quad \text{ } \\
\end{align*}
\]
3.

a. In the space below, draw a small rectangle. Estimate to split it into 2 equal parts. How many lines did you draw to make 2 equal parts? What is the name of each fractional unit?

b. Draw another small rectangle. Estimate to split it into 3 equal parts. How many lines did you draw to make 3 equal parts? What is the name of each fractional unit?

c. Draw another small rectangle. Estimate to split it into 4 equal parts. How many lines did you draw to make 4 equal parts? What is the name of each fractional unit?

4.

Name the fraction that is shaded.

---------------------------

viii
5. Estimate to partition the rectangle into thirds.

![Rectangle partitioned into thirds]

6. Name the fraction that is shaded.

![Square with one shaded triangle]

7. Each circle represents 1 whole pie. Estimate to show how you would cut the pie into fractional units as indicated below.

![Three circles with labels: halves, thirds, sixths]
8. Each rectangle represents 1 sheet of paper. Estimate to draw lines to show how you would cut the paper into fractional units as indicated below.

9. Each rectangle represents 1 sheet of paper. Estimate to draw lines to show how you would cut the paper into fractional units as indicated below.

10. Draw a circle. Partition it into thirds and label each third.

11. Draw a square. Partition it into fourths and label each fourth.
12. Show 3 ways you could partition a rectangle into fourths. Label each fourth.

13. Show 3 ways you could partition a rectangle into sixths. Label each sixth.
3.NF.A.1 – Understand a fraction $\frac{1}{b}$, with denominators 2, 3, 4, 6, and 8, as the quantity formed by one part when a whole is partitioned into $b$ equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by $a$ parts of size $\frac{1}{b}$.

1. ________ of the whole is shaded.

2. ________ of the whole is shaded.

3. ________ of the whole is shaded.

4. Shade $\frac{5}{8}$ of the fraction bar.

5. The fraction bar below has ______ equal parts. Each part is ______ of the whole.
6. ________ of the whole is shaded.

7. ________ of the whole is shaded.

8. ________ of the whole is shaded.

9. Shade 2/5 of the fraction bar.

10. The fraction bar below has ______ equal parts. Each part is ______ of the whole.
3.NF.A.2 – Understand a fraction with denominators 2, 3, 4, 6, and 8 as a number on a number line diagram.

1. Create a number line below between 0 and 1. Partition the number line to show fourths. Label each fourth.

2. Write the missing fractions on the number line.

3. Write the fraction that goes with the letters below.

   A. ___________  
   B. ___________  
   C. ___________  
   K. ___________  
   L. ___________  

4. Estimate to label 6/8 on the number line. Be sure to label the fractions at 0 and 1.
5. Write the missing fractions on the number line.

6. Which fraction does each point on the number line represent?

\[ F = \_\_\_\_\_\_ \quad M = \_\_\_\_\_\_ \quad P = \_\_\_\_\_\_ \]

7. Write the missing fraction in the box below.

8. Write the missing numbers in the number lines below.

9. Partition the number line into thirds. Label each third.

10. Estimate to label \( \frac{3}{4} \)
on the number line. Be sure to label each fraction.

11. Partition the number line into eighths. Be sure to label each fraction.

12. Estimate to label 2/3 on the number line. Be sure to label the fractions at 0 and 1.

13. Estimate to place 5/6 on the number line. Be sure to label the fractions at 0 and 1.
14. Partition the number line into sixths. Be sure to label each fraction.

15. Estimate to place $\frac{2}{4}$ on the number line. Be sure to label each fraction.

16. The number line shows two numbers, 0 and 1. Where would $\frac{8}{6}$ be on this number line?

17. Estimate to label $\frac{2}{3}$ on the number line. Be sure to label the fractions at 0 and 1.
18. Write the fractions represented by the letters on the number line.

A = ___________
B = ___________
C = ___________

19. What fraction is represented by the point on the number line below?

20. Partition the number line into fourths, then label ¾ on the line.

21. Locate and label the following fractions on the number line.

\[
\begin{array}{ccccccc}
\frac{0}{6} & \frac{6}{6} & \frac{12}{6} & \frac{3}{6} & \frac{9}{6} \\
\end{array}
\]
22. Draw points on the number line for the fractions below. Label the points. Be as exact as possible.

\[
\begin{array}{cccccccc}
& 1 & 2 & 3 & 4 & 5 & 6 \\
\frac{1}{2} & \frac{2}{2} & \frac{3}{2} & \frac{4}{2} & \frac{5}{2} & \frac{6}{2} \\
\end{array}
\]

23. Estimate to equally partition the line into thirds and label the fractions on the number line. Label the whole numbers as fractions and box them.

24. Estimate to equally partition the line into fourths. Label each fraction on the number line.

25. Estimate to equally partition the line into eighths. Label each fraction on the number line.
3.NF.A.3b – Recognize and generate simple equivalent fractions, e.g., \( \frac{1}{2} = \frac{2}{4}, \frac{4}{6} = \frac{2}{3} \). Explain why the fractions are equivalent, e.g., by using a visual fraction model.

1. Create a model to show how many sixths can be equivalent to \( \frac{1}{2} \).

2. Write a fraction that is equivalent to \( \frac{4}{8} \).

3. Shade the model to show an equivalent fraction.

4. Write a fraction that is equivalent to \( \frac{4}{6} \).
5. Fill in the missing denominator to show equivalent fractions.

\[ \frac{4}{6} = \frac{2}{\quad} \]

6. Create a model to show many eighths are equivalent to \( \frac{3}{4} \).

7. Fill in the missing denominator to show equivalent fractions.

\[ \frac{4}{\quad} = \frac{1}{3} \]

8. Write a fraction that is equivalent to \( \frac{4}{12} \).

9. Write an equivalent fraction for \( \frac{1}{3} \).
10. Write an equivalent fraction for the one shown in the model below: __________

11. Write a fraction that is equivalent to $\frac{1}{4}$.

12. Write an equivalent fraction for the one in the model shown below: ______

13. Fill in the missing numerator to show equivalent fractions.

$$\frac{4}{10} = \frac{_______}{100}$$

14. Fill in the missing denominator to show equivalent fractions.

$$\frac{2}{4} = \frac{1}{_______}$$
15. Write an equivalent fraction for $\frac{5}{6}$.

16. Fill in the missing numerator to show equivalent fractions.

\[
\frac{4}{6} = \_ \\quad \frac{6}{10} = \_\quad \frac{100}{100}
\]

17. Fill in the missing numerator to show equivalent fractions.

18. Create a model to show many sixths are equivalent to $\frac{1}{3}$. 
19. Write an equivalent fraction for \( \frac{1}{4} \).

20. Create a model to find an equivalent fraction for \( \frac{3}{8} \).

21. Write an equivalent fraction for the one shown in the model below. _______
3.NF.A.3c – Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.

1. There are __________ fourths in one whole.

2. Draw models to represent each fraction in the pair below. Circle the fraction that is MORE. 
   
   3 thirds
   3 sixths

3. Partition the number line into thirds. Label 3/3 on the number line.

4. There are __________ sixths in one whole.

5. Create a model to show 8/4.

7. Label the following points on the number line.

\[
\begin{array}{cccccc}
0 & 6 & 6 & 12 & 3 & 9 \\
\frac{6}{6} & \frac{6}{6} & \frac{12}{6} & \frac{3}{6} & \frac{9}{6}
\end{array}
\]

8. Create a model to show 6/3.

9. Where would 8/6 be on this number line?

10. There are \___________ fourths are in 3 wholes.
11. Draw points on the number line for each fraction listed below. Label the points. Be as exact as possible.

\[
\frac{1}{3} \quad \frac{2}{3} \quad \frac{3}{3} \quad \frac{4}{3} \quad \frac{5}{3} \quad \frac{6}{3}
\]

12. Create a model to show how many twelfths are in 2 wholes.

13. Partition the number line into sixths. Show 6/6 on the number line.

14. What mixed number is shown by the model below? _________
15. What mixed number is shown by the model below? ________
3.NF.A.3d – Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or < and justify the conclusions e.g., by using a visual fraction model.

1. Compare using <, =, >.

\[
\frac{1}{4} \quad \underline{\quad} \quad \frac{1}{8}
\]

2. Compare using <, =, >.

\[
\frac{4}{4} \quad \underline{\quad} \quad \frac{2}{4}
\]

3. Fill in a denominator to make the inequality true.

\[
\frac{3}{\underline{\quad}} < \frac{3}{6}
\]


\[
\frac{4}{6} \quad \underline{\quad} \quad \frac{4}{8}
\]
5. Label a fraction on the number line greater than 1/3.

\[
\begin{array}{c}
0 \\
\hline
\end{array}
\]

6. Fill in a denominator to make the inequality true.

\[
\frac{4}{\_} > \frac{4}{8}
\]

7. Compare using <, =, >.

\[
\begin{array}{c}
\frac{1}{6} \\
\hline
\frac{1}{3}
\end{array}
\]

8. Compare using <, =, >.

\[
\begin{array}{c}
\frac{1}{4} \bigcirc \frac{1}{8}
\end{array}
\]

9. Label a fraction on the number line that is less than \(\frac{3}{4}\).
10. Compare using $<, =, >$.

\[
\frac{4}{4} \circleddash \frac{2}{4}
\]

11. Fill in a denominator to make the inequality true.

\[
\frac{1}{2} > \frac{1}{\underline{\phantom{1}}}
\]

12. Compare using $<, =, >$.

\[
\frac{1}{6} \underline{\phantom{<}} \frac{1}{8}
\]

13. Compare using $<, =, >$.

\[
\frac{6}{6} \circleddash \frac{10}{6}
\]

14. Write a fraction greater than $\frac{4}{6}$ _______________
15. Compare using $<$, $=$, $>$. 

\[ \frac{7}{6} \quad \bigcirc \quad \frac{5}{6} \]

16. Label a fraction on the number line greater than $\frac{5}{8}$.

17. Which fraction is greater?

\[ \frac{6}{8} \quad \text{or} \quad \frac{2}{8} \]

18. Use $<$, $>$, or $=$ to make the statement true.

\[ \frac{5}{8} \quad \bigcirc \quad \frac{7}{8} \]

19. Write a fraction greater than $\frac{1}{4}$ __________
20. Which fraction is greater?  \( \frac{4}{8} \) or \( \frac{4}{6} \)

21. Compare using <, >, or =.

\( \frac{2}{3} \) ________ \( \frac{2}{6} \)
Practice Workbook E

3.MD.B.3 – Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.

1.

The picture graph below shows data from a survey of students’ favorite sports.

<table>
<thead>
<tr>
<th>Favorite Sports</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Football</td>
<td>Soccer</td>
<td>Tennis</td>
<td>Hockey</td>
</tr>
<tr>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Each ● represents 3 students.

a. The same number of students picked _________ and __________ as their favorite sport.

b. How many students picked tennis as their favorite sport?

c. How many more students picked soccer than tennis? Use a number sentence to show your thinking.

d. How many total students were surveyed?
2. The tally chart below shows a survey of students’ favorite pets. Each tally mark represents 1 student.

<table>
<thead>
<tr>
<th>Pets</th>
<th>Number of Pets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cats</td>
<td>### /</td>
</tr>
<tr>
<td>Turtles</td>
<td>///</td>
</tr>
<tr>
<td>Fish</td>
<td>//</td>
</tr>
<tr>
<td>Dogs</td>
<td>### ///</td>
</tr>
<tr>
<td>Lizards</td>
<td>//</td>
</tr>
</tbody>
</table>

The chart shows a total of ________ students.

Use the tally chart in Problem 1 to complete the picture graph below. The first one has been done for you.

<table>
<thead>
<tr>
<th>Favorite Pets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cats</td>
</tr>
</tbody>
</table>

Each circle represents 1 student.

a. The same number of students picked ________ and ________ as their favorite pet.

b. How many students picked dogs as their favorite pet?

c. How many more students chose cats than turtles as their favorite pet?
3.

<table>
<thead>
<tr>
<th>Favorite Pets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cats</th>
<th>Turtles</th>
<th>Fish</th>
<th>Dogs</th>
<th>Lizards</th>
</tr>
</thead>
</table>

Each □ represents 2 students.

a. What does each □ represent?

b. How many students does □□□□□ represent? Write a number sentence to show how you know.

c. How many more □ did you draw for dogs than for fish? Write a number sentence to show how many more students chose dogs than fish.
The chart below shows a survey of the book club’s favorite type of book.

<table>
<thead>
<tr>
<th>Book Club’s Favorite Type of Book</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Book</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>Mystery</td>
</tr>
<tr>
<td>Biography</td>
</tr>
<tr>
<td>Fantasy</td>
</tr>
<tr>
<td>Science Fiction</td>
</tr>
</tbody>
</table>

a. Draw tape diagrams with a unit size of 4 to represent the book club’s favorite type of book.

b. Use your tape diagrams to draw vertical tape diagrams that represent the data.
5. This table shows the number of students in each class.

<table>
<thead>
<tr>
<th>Number of Students in Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Baking</td>
</tr>
<tr>
<td>Sports</td>
</tr>
<tr>
<td>Chorus</td>
</tr>
<tr>
<td>Drama</td>
</tr>
</tbody>
</table>

Use the table to color the bar graph. The first one has been done for you.

a. What is the value of each square in the bar graph?

b. Write a number sentence to find how many total students are enrolled in classes.

c. How many fewer students are in sports than in chorus and baking combined? Write a number sentence to show your thinking.
6. This bar graph shows Kyle’s savings from February to June. Use a straightedge to help you read the graph.

<table>
<thead>
<tr>
<th>Month</th>
<th>Amount in Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
<td>30</td>
</tr>
<tr>
<td>March</td>
<td>45</td>
</tr>
<tr>
<td>April</td>
<td>25</td>
</tr>
<tr>
<td>May</td>
<td>35</td>
</tr>
<tr>
<td>June</td>
<td>50</td>
</tr>
</tbody>
</table>

a. How much money did Kyle save in May?

b. In which months did Kyle save less than $35?

c. How much more did Kyle save in June than April? Write a number sentence to show your thinking.

d. The money Kyle saved in __________ was half the money he saved in __________.
7. This table shows the favorite subjects of third graders at Cayuga Elementary.

<table>
<thead>
<tr>
<th>Favorite Subjects</th>
<th>Number of Student Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>18</td>
</tr>
<tr>
<td>ELA</td>
<td>13</td>
</tr>
<tr>
<td>History</td>
<td>17</td>
</tr>
<tr>
<td>Science</td>
<td>?</td>
</tr>
</tbody>
</table>

Use the table to color the bar graph.

a. How many students voted for science?

b. How many more students voted for math than for science? Write a number sentence to show your thinking.

c. Which gets more votes, math and ELA together or history and science together? Show your work.
8.

This bar graph shows the number of liters of water Skyler uses this month.

<table>
<thead>
<tr>
<th>Week</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. During which week does Skyler use the most water? _________________
The least? _________________

b. How many more liters does Skyler use in Week 4 than Week 2?

c. Write a number sentence to show how many liters of water Skyler uses during Weeks 2 and 3 combined.

d. How many liters does Skyler use in total?

e. If Skyler uses 60 liters in each of the 4 weeks next month, will she use more or less than she uses this month? Show your work.
9. The chart below shows the number of magazines sold by each student.

<table>
<thead>
<tr>
<th>Student</th>
<th>Ben</th>
<th>Rachel</th>
<th>Jeff</th>
<th>Stanley</th>
<th>Debbie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magazines Sold</td>
<td>300</td>
<td>250</td>
<td>100</td>
<td>450</td>
<td>600</td>
</tr>
</tbody>
</table>

a. Use the chart to draw a bar graph below. Create an appropriate scale for the graph.

b. Explain why you chose the scale for the graph.

c. How many fewer magazines did Debbie sell than Ben and Stanley combined?

d. How many more magazines did Debbie and Jeff sell than Ben and Rachel?
10. The bar graph shows the number of visitors to a carnival from Monday through Friday.

a. How many fewer visitors were there on the least busy day than on the busiest day?

b. How many more visitors attended the carnival on Monday and Tuesday combined than on Thursday and Friday combined?
The graph below shows the number of library books checked out in five days.

![Bar Graph]

\[ \text{Library Books Checked Out} \]

\[ \text{Number of Library Books Checked Out} \]

\[ \text{Monday} \quad \text{Tuesday} \quad \text{Wednesday} \quad \text{Thursday} \quad \text{Friday} \]

\[ \text{Day} \]

\[ 0 \quad 50 \quad 100 \quad 150 \quad 200 \quad 250 \quad 300 \quad 350 \quad 400 \]

\[ \text{c.} \quad \text{How many books in total were checked out on Wednesday and Thursday?} \]

\[ \text{d.} \quad \text{How many more books were checked out on Thursday and Friday than on Monday and Tuesday?} \]
12. Maria counts the coins in her piggy bank and records the results in the tally chart below. Use the tally marks to find the total number of each coin.

<table>
<thead>
<tr>
<th>Coin</th>
<th>Tally</th>
<th>Number of Coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penny</td>
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</table>

a. Use the tally chart to complete the bar graph below. The scale is given.

b. How many more pennies are there than dimes?

c. Maria donates 10 of each type of coin to charity. How many total coins does she have left? Show your work.
13.

Ms. Hollmann’s class goes on a field trip to the planetarium with Mr. Fiore’s class. The number of students in each class is shown in the picture graphs below.

<table>
<thead>
<tr>
<th>Students in Ms. Hollmann’s Class</th>
<th>Students in Mr. Fiore’s Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>Boys</td>
</tr>
<tr>
<td>Girls</td>
<td>Girls</td>
</tr>
<tr>
<td>[Diagram showing numbers of students]</td>
<td>[Diagram showing numbers of students]</td>
</tr>
</tbody>
</table>

\[ \square = 2 \text{ students} \]

a. How many fewer boys are on the trip than girls?

b. It costs $2 for each student to attend the field trip. How much money does it cost for all students to attend?

c. The cafeteria in the planetarium has 9 tables with 8 seats at each table. Counting students and teachers, how many empty seats should there be when the 2 classes eat lunch?
3.MD.B.4 – Generate measurement data by measuring lengths using rulers marked with halves or fourths of an inch. Show the data by making a line plot, where the horizontal line is marked off in appropriate units, whole numbers, halves, or quarters.

1. Measure to the nearest ¼ inch. ____________

2. What is the length of the shape below? __________

3. The line is about _______ inches long.

4. What is the length of the shape?
5. What is the length of the line to the nearest \( \frac{1}{4} \) inch? __________

6. Measure the shape below to the nearest \( \frac{1}{4} \) inch. __________

7. What is the length of the shape below? ______

8. The line is about ______ inches long.

9. What is the length of the shape below? Measure to the nearest \( \frac{1}{4} \) inch. __________
10. What is the length of the object below? _____________

![Ruler and pencil](image1)

11. What is the length of the shape below? Measure to the nearest ¼ inch. ________

![Eraser](image2)

12. Tell the length of the shape, to the nearest ¼ inch. ____________

13. The line is about __________ inches long.

![Ruler and line](image3)

14. What is the length of the screwdriver in inches? __________
15. The line is about _____ inches long.

16. Tell the length of the line to the nearest ¼ inch. _____

17. The line is about _____ inches long.

18. Tell the length of the object to the nearest ¼ inch. ____________
19. Tell the length of the line to the nearest $\frac{1}{2}$ inch. __________

20. Tell the length of the object to the nearest $\frac{1}{4}$ inch. __________

21. The line is about _____ inches long.

22. Tell the length of the line to the nearest $\frac{1}{4}$ inch. __________

23. The line is about __________ inches long. Measure to the nearest $\frac{1}{2}$ inch.

24. Tell the length of the object to the nearest $\frac{1}{2}$ inch. __________
25. The line is about ______ inches long.
Practice Workbook F

3.OA.C.7 – Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division, (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of grade 3, know from memory all products of two one-digit numbers.

1. 4 x 5 = ______

2. 3 x 7 = ______

3. ______ x 6 = 18

4. 45 ÷ 9 = ______

5. 28 ÷ 4 = ______

6. 8 x ___ = 56
7. $\frac{81}{\_\_\_} = 9$

8. $10 \times 6 = \_\_\_$

9. $\_\_\_ \div 9 = 6$

10. $4 \times \_\_\_ = 40$

11. $2 \times \_\_\_ = 22$

12. $3 \times 4 = \_\_\_$
13. ______ ÷ 8 = 3

14. 5 ÷ 1 = ________

15. 21 ÷ 7 = ________

16. 63 ÷ ____ = 7

17. 6 x _____ = 36

18. 3 x 8 = ________
19. _____ × 4 = 36

20. 4 × 6 = __________

21. 20 ÷ 2 = _________

22. 5 × 6 = __________

23. 18 ÷ 2 = _________

24. 50 ÷ _________ = 5

25. 80 ÷ 8 = __________
3.MD.C.7b – Multiply side lengths to find the areas of rectangles with whole number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular area in mathematical reasoning.

1. What is the area of the rectangle? __________

2. What is the area of a square with 4 inch sides? __________

3. What is the area of the rectangle? __________
4. What is the area of the room shown here? __________

![9 ft x 8 ft room diagram]

5. Use the grid to create a rectangle with an area of 24 square units. Label the side lengths.

![Grid for rectangle]

6. What is the area of the room shown here? __________

![11 ft x 8 ft room diagram]
7. What is the area of the rectangle? _______________

![Rectangle diagram with sides 3m and 6m]

8. Use the grid to create a rectangle with an area of 15 square units. Label the side lengths.

![Grid diagram]

9. Find the area of the shape shown here. ________

![Square diagram with sides 6cm]

115
10. Find the area of a square with 8 inch sides. ___________

11. Find the area of the room shown here. ___________

```
4ft
8ft
```

12. What is the area of the rectangle? ___________

```
4cm
7cm
```
13. Find the area of the rectangle shown below. ________

![Rectangle with dimensions 9m x 3m](image)

14. Use the grid below to draw a rectangle that has an area of 56 square units.

![Grid with 56 square units](image)

15. Find the area. ________

![Rectangle with dimensions 6mm x 4mm](image)
16. Find the area. __________

12ft
5ft

17. Find the area. __________

6m
2m

18. Find the area. __________

9ft
5ft
19. Find the area. 

20. Find the area. 

21. Use the grids to draw a rectangle with an area of 32 square units. Label the side lengths.
3.MD.C.7c – Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths \(a\) and \(b + c\) is the sum of \(a \times b\) and \(a \times c\). Use area models to represent the distributive property in mathematical reasoning.

1. Use the distributive property to find the area of the shape. __________

```
  5
  3
```

2. Use the distributive property to partition and find the area of the shape. __________

```
  12
  3
```

3. Use the distributive property to find the area of the shape. __________

```
  6 cm
  5 cm
  3 cm
```

4. Use the distributive property to find the area of the shape. __________

```
  7
  5
  3
```
5. Fill in the missing side length. Use the distributive property to find the area of the shape. __________

6. Fill in the missing side length. Complete the equation, then use the distributive property to find the area of the shape. __________

7. Use the distributive property to partition and find the area of the shape. __________
8. Fill in the missing side length. Complete the equation, then use the distributive property to find the area of the shape. ____________

\[8 \times 7 = 8 \times (\underline{\hspace{1cm}} + \underline{\hspace{1cm}})\]

9. Use the distributive property to find the area of the shape. ____________

10. Fill in the missing side length. Complete the equation, then use the distributive property to find the area of the shape. ____________

\[9 \times 13 = 9 \times (\underline{\hspace{1cm}} + \underline{\hspace{1cm}})\]
11. Fill in the missing side length, then use the distributive property to find the area of the shape. ____________

12. Fill in the missing side length. Complete the equation, then use the distributive property to find the area of the shape. ____________

\[ 7 \times 13 = 7 \times (\Box + 3) \]

13. Fill in the missing side lengths, then use the distributive property to find the area. ____________

14. Fill in the missing side lengths, then use the distributive property to find the area. ____________

Total area: ____________
15. Fill in the missing side lengths, then use the distributive property to find the area. 

16. Fill in the missing side lengths, then use the distributive property to find the area. 

17. Fill in the missing side length. Complete the equation, then use the distributive property to find the area of the shape. 

18. Fill in the missing side length, then use the distributive property to find the area of the shape.
19. Fill in the missing side lengths, then use the distributive property to find the area.

Total Area: ______________

20. Fill in the missing side lengths, then use the distributive property to find the area. ___

21. Fill in the missing side lengths, then use the distributive property to find the area. ___

22. Fill in the missing side lengths, then use the distributive property to find the area. ___
23. Fill in the missing side lengths, then use the distributive property to find the area. ___

24. Fill in the missing side lengths, then use the distributive property to find the area. ___

25. Fill in the missing side lengths, then use the distributive property to find the area. ___
3.MD.D.8 – Solve real world mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

1.
Gale makes a miniature stop sign, a regular octagon, with a perimeter of 48 centimeters for the town he built with blocks. What is the length of each side of the stop sign?

2.
Travis bends wire to make rectangles. Each rectangle measures 34 inches by 12 inches. What is the total length of the wire needed for two rectangles?

3.
The perimeter of a rectangular bathroom is 32 feet. The width of the room is 8 feet. What is the length of the room?
4. Raj uses 6-inch square tiles to make a rectangle, as shown below. What is the perimeter of the rectangle in inches?

5. Mischa makes a 4-foot by 6-foot rectangular banner. She puts ribbon around the outside edges. The ribbon costs $2 per foot. What is the total cost of the ribbon?

6. Colton buys a roll of wire fencing that is 120 yards long. He uses it to fence in his 18-yard by 24-yard rectangular garden. Will Colton have enough wire fencing left over to fence in a 6-yard by 8-yard rectangular play space for his pet rabbit?
7. Rosie draws a square with a perimeter of 36 inches. What are the side lengths of the square?

8. Judith uses craft sticks to make two 24-inch by 12-inch rectangles. What is the total perimeter of the 2 rectangles?

9. An architect draws a square and a rectangle, as shown below, to represent a house that has a garage. What is the total perimeter of the house with its attached garage?
10. Manny draws 3 regular pentagons to create the shape shown below. The perimeter of 1 of the pentagons is 45 inches. What is the perimeter of Manny’s new shape?

![Diagram of a pentagon](image)

11. Johnny uses 2-inch square tiles to make a square, as shown below. What is the perimeter of Johnny’s square?

![Diagram of a square](image)

12. Lisa tapes three 7-inch by 9-inch pieces of construction paper together to make a happy birthday sign for her mom. She uses a piece of ribbon that is 144 inches long to make a border around the outside edges of the sign. How much ribbon is leftover?

![Diagram of construction paper](image)
3.G.A.1 – Understand that shapes in different categories may share attributes. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

1. For each polygon below, list as many attributes as you can:

<table>
<thead>
<tr>
<th>Polygon</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Rectangle" /></td>
<td></td>
</tr>
<tr>
<td><img src="image2" alt="Parallelogram" /></td>
<td></td>
</tr>
<tr>
<td><img src="image3" alt="Trapezoid" /></td>
<td></td>
</tr>
<tr>
<td><img src="image4" alt="Isosceles Trapezoid" /></td>
<td></td>
</tr>
<tr>
<td><img src="image5" alt="Rhombus" /></td>
<td></td>
</tr>
</tbody>
</table>

2. Complete the sentence about the shapes in number 1. All of the shapes are ___________________ because they have four ____________.
3. Each quadrilateral below has at least 1 set of parallel sides. Trace each set of parallel sides with a colored pencil.

![Quadrilaterals](image)

b. Using a straightedge, sketch a different quadrilateral with at least 1 set of parallel sides.

4. Sketch a quadrilateral that is not a parallelogram.

5. Sketch a rectangle that is not a square.

6. Sketch a parallelogram that is not a rhombus.
7. Write if the attribute is true or false in the table.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Polygon</th>
<th>True or False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: 3 Sides</td>
<td>![Triangle]</td>
<td>True</td>
</tr>
<tr>
<td>4 Sides</td>
<td>![Quadrilateral]</td>
<td></td>
</tr>
<tr>
<td>2 Sets of Parallel Sides</td>
<td>![Parallelogram]</td>
<td></td>
</tr>
<tr>
<td>4 Right Angles</td>
<td>![Rhombus]</td>
<td></td>
</tr>
<tr>
<td>Quadrilateral</td>
<td>![Square]</td>
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