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## Unit 8  Probability and Data Management: Graphs

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### Unit 15 Probability and Data Management: Probability

The lessons in this unit are optional for the Manitoba curriculum, so quizzes and tests are not provided.
Introduction to Quizzes and Tests

We provide a quiz for, on average, every four lessons and a test covering the material of two to three quizzes, with one or two tests per unit. Students should need no more than 10 minutes to complete a quiz and no more than 45 minutes to complete a test.

Quizzes cover material both from lessons that are required to cover the curriculum and lessons labelled as recommended, while tests only cover material from lessons that are required to cover the curriculum.

Quizzes can be used as confidence builders and as formative assessment tools. A quiz should be administered after the last lesson that it covers has been taught. Tests are intended to be used as summative assessment tools. We recommend allowing students time to receive and internalize the feedback from all relevant quizzes before administering the test. The introduction to each unit in the Teacher Resource identifies which lessons are covered by each quiz and test.
Unit 8: Probability and Data Management

Quiz (Lessons 1–5) — MB

1. Are all possible responses given? If not, add an “other” category.
   a) What is your favourite colour?
      [ ] red [ ] yellow [ ] blue
   b) Which of these flavours do you like best?
      [ ] vanilla [ ] chocolate [ ] strawberry

2. The first row shows what 😊 means. What does 😫 mean? Fill in the table.

<table>
<thead>
<tr>
<th>😊</th>
<th>2</th>
<th>8</th>
<th>10</th>
<th>50</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>😫</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. a) Use the pictograph to fill in the table.

<table>
<thead>
<tr>
<th>Birds Seen</th>
<th>😊 = 4 birds</th>
<th>Type of Bird</th>
<th>Number Seen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jays</td>
<td>⚫⚫⚫⚫</td>
<td>Jays</td>
<td></td>
</tr>
<tr>
<td>Robins</td>
<td>⚫⚫</td>
<td>Robins</td>
<td></td>
</tr>
<tr>
<td>Finches</td>
<td>⚫</td>
<td>Finches</td>
<td></td>
</tr>
<tr>
<td>Sparrows</td>
<td>⚫⚫⚫⚫⚫⚫⚫</td>
<td>Sparrows</td>
<td></td>
</tr>
</tbody>
</table>

b) How many birds were seen in total? _________

c) How many times as many jays as finches were seen? _________

BONUS ➤ Make up your own question from the pictograph. Write the answer.

_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
4. Tasha surveyed her grade about their favourite type of movie and gave four choices.
   a) Here are the results of Tasha’s survey. Tally the data.

   Action:  

   Drama:  

   Comedy:  

   Romance:  

   b) Fill in the title and axis labels on the bar graph.

   c) Count by 4s to fill in the numbers on the axis.

   d) Complete the bar graph.

   Title: ____________________________________________________

   | Action | | | | | | | |
   | Drama | | | | | | | |
   | Comedy | | | | | | | |
   | Romance | | | | | | | |

   0 _ _ _ _ _ _ _ _
1. a) Add “other.”  
   b) Do not add “other.”
2. 1, 4, 5, 25, 50
3. a) 12  
   8  
   4  
   24  
   b) 48  
   c) 3  
   BONUS  
   Answers will vary.  
   Teacher to check.
4. a) 22  
   8  
   24  
   6  
   b) Teacher to check.  
   c) 4, 8, 12, 16, 20, 24, 28  
   d) Teacher to check.
1. The first row shows what ☺ means. What does ☻ mean? Fill in the table.

<table>
<thead>
<tr>
<th>☺</th>
<th>4</th>
<th>6</th>
<th>20</th>
<th>30</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>☻</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. a) Use the pictograph to fill in the table.

<table>
<thead>
<tr>
<th>Birds Seen</th>
<th>☭ = 10 birds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jays</td>
<td>☭</td>
</tr>
<tr>
<td>Robins</td>
<td>☭</td>
</tr>
<tr>
<td>Finches</td>
<td></td>
</tr>
<tr>
<td>Sparrows</td>
<td>☭</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Bird</th>
<th>Number Seen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jays</td>
<td></td>
</tr>
<tr>
<td>Robins</td>
<td></td>
</tr>
<tr>
<td>Finches</td>
<td></td>
</tr>
<tr>
<td>Sparrows</td>
<td></td>
</tr>
</tbody>
</table>

b) How many birds were seen in total? _______

c) How many times as many sparrows as finches were seen? _______
3. Kyle surveyed his grade about their favourite type of movie and gave four choices.

   a) Here are the results of Kyle’s survey. Tally the data.

      Action:                    
      Drama:                     
      Comedy:                   
      Romance:                  

   b) Fill in the title and axis labels on the bar graph.

c) Count by 10s to fill in the numbers on the axis.

d) Complete the bar graph.

   Title: ___________________________
1. 2, 3, 10, 15, 200
2.  
   a) 30
      20
      5
      60
   b) 115
   c) 12
3.  
   a) 30
      15
      35
      10
   b) Teacher to check.
   c) 10, 20, 30, 40, 50, 60, 70
   d) Teacher to check.
1. Write the fraction shown by the shaded part of the image.
   a)  
   b)  

2. Shade half of the figure. Write two fractions to describe the shaded part.
   a)  
   b)  

3. How many shaded parts does the fraction show? How many parts are not shaded?
   a)  ______ shaded  b)  ______ shaded
      ______ not shaded  ______ not shaded

4. A fraction is equal to 0 if its numerator is _____.

5. Shade two different fractions between 0 and $\frac{1}{2}$, and then write the fractions.
   This fraction is  
   This fraction is  

Unit 9: Number Sense

Quiz (Lessons 45, 46) — MB

1. a) \(\frac{3}{4}\)
b) \(\frac{6}{10}\)

2. Teacher to check shading.
a) \(\frac{1}{2} = \frac{2}{4}\)
b) \(\frac{1}{2} = \frac{3}{6}\)

3. a) 7
   b) 3

4. 0

5. Teacher to check shading.
   Fractions could be
   \(\frac{1}{8}\) or \(\frac{1}{4}\).
1. Circle the greater fraction.
   
   a) \( \frac{4}{7} \) or \( \frac{6}{7} \)
   
   b) \( \frac{3}{10} \) or \( \frac{1}{10} \)
   
   c) \( \frac{4}{5} \) or \( \frac{4}{10} \)
   
   d) \( \frac{22}{35} \) or \( \frac{22}{23} \)

2. Two fractions have the same denominator but different numerators. How can you tell which fraction is greater?

3. Order the fractions from least to greatest by considering the numerators and denominators.

   a) \( \frac{8}{10} \) \( \frac{3}{10} \) \( \frac{1}{10} \) \( \frac{5}{10} \) \( \frac{2}{10} \)

   b) \( \frac{6}{17} \) \( \frac{6}{8} \) \( \frac{6}{25} \) \( \frac{6}{6} \) \( \frac{6}{138} \)

   

4. a) Write the fractions in the correct category.

   

   \[
   \begin{array}{cccc}
   \frac{7}{8} & \frac{1}{6} & \frac{2}{5} & \frac{2}{3} \\
   \hline
   0 \text{ to } \frac{1}{2} & \frac{1}{2} \text{ to } 1
   \end{array}
   \]

   b) Use the results from part a) to write < or > in the box between the pair of fractions.

   i) \( \frac{2}{3} \) \( \frac{2}{5} \)

   ii) \( \frac{1}{6} \) \( \frac{7}{8} \)

   iii) \( \frac{2}{3} \) \( \frac{1}{6} \)

   iv) \( \frac{2}{5} \) \( \frac{7}{8} \)
5. Draw a picture that fits all the clues.

a) There are 6 circles and squares.
\[
\frac{2}{6} \text{ of the figures have four sides.}
\]
\[
\frac{4}{6} \text{ of the figures are shaded.}
\]

b) There are 5 squares and triangles.
\[
\frac{3}{5} \text{ of the figures have four sides.}
\]
\[
\frac{2}{5} \text{ of the figures are shaded.}
\]
Unit 9: Number Sense

Quiz (Lessons 48, 49, 51) — MB

1. Circle the following:
   a) $\frac{6}{7}$
   b) $\frac{3}{10}$
   c) $\frac{4}{5}$
   d) $\frac{22}{23}$

2. If two fractions have the same denominator, the fraction with the larger numerator is greater.

3. a) $\frac{1}{10}$, $\frac{2}{10}$, $\frac{3}{10}$, $\frac{5}{10}$, $\frac{8}{10}$
   b) $\frac{6}{138}$, $\frac{6}{25}$, $\frac{6}{17}$, $\frac{6}{8}$, $\frac{6}{6}$

4. a) 
   
<table>
<thead>
<tr>
<th>0 to $\frac{1}{2}$</th>
<th>$\frac{1}{2}$ to 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 5 6 7 8 9</td>
<td>7 2 8 3 4 5 6</td>
</tr>
</tbody>
</table>
   b) i) >
   ii) <
   iii) >
   iv) <

5. Sample answers:
   a) □□□□□□
   b) △△△△△

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1. Shade the fraction.
   a) \( \frac{4}{6} \)  
   b) \( \frac{3}{9} \)  
   c) \( \frac{5}{8} \)

2. Dory, Jessica, and Rayder each brought 1 cake to school for their year-end class party. None of the cakes are the same size. The teacher cut each cake into 8 equal pieces, so everyone in the class can have a piece. Dory says, “That’s not fair at all!” and Rayder says, “That’s perfectly fair!”
   a) Why does Dory think it’s unfair?
      ____________________________________________________________
      ____________________________________________________________
   b) Why does Rayder think it’s fair?
      ____________________________________________________________
      ____________________________________________________________

3. Write > or <.
   a) \( \frac{3}{7} \) \( \square \) \( \frac{1}{2} \)
   b) \( \frac{1}{2} \) \( \square \) \( \frac{5}{9} \)
   c) \( \frac{9}{16} \) \( \square \) \( \frac{1}{2} \)

4. Circle the greater fraction.
   a) \( \frac{3}{5} \) or \( \frac{5}{5} \)
   b) \( \frac{4}{16} \) or \( \frac{4}{17} \)
   c) \( \frac{9}{11} \) or \( \frac{1}{3} \)

5. Order the fractions from greatest to least by considering the numerators and denominators.
   a) \( \frac{34}{117} \), \( \frac{101}{117} \), \( \frac{17}{117} \), \( \frac{2}{117} \), \( \frac{60}{117} \)
   b) \( \frac{9}{26} \), \( \frac{9}{12} \), \( \frac{9}{14} \), \( \frac{9}{65} \), \( \frac{9}{31} \)
6. A jar contains 7 red marbles, 3 yellow marbles, and 5 blue marbles. What fraction of the marbles are not blue? You can make a picture to help.

7. Write four fraction statements for the picture: [Diagram of circles and triangles]
1. Teacher to check that the following number of parts is shaded:
   a) four
   b) three
   c) five

2. a) Dory thinks this is unfair because $\frac{1}{8}$ of a smaller cake will be a smaller piece than $\frac{1}{8}$ of a larger cake.
   b) Rayder thinks it is fair because all of the cakes will be split into the same number of pieces.

3. a) <
   b) <
   c) >

4. Circle the following:
   a) $\frac{5}{5}$
   b) $\frac{4}{16}$
   c) $\frac{9}{11}$

5. a) $\frac{101}{117} \cdot \frac{60}{117} \cdot \frac{34}{117}$
   b) $\frac{9}{12} \cdot \frac{9}{14} \cdot \frac{9}{26} \cdot \frac{9}{31} \cdot \frac{9}{65}$

6. $\frac{10}{15}$

7. Answers will vary.
   Sample answers:
   $\frac{3}{7}$ are triangles, $\frac{3}{7}$ are circles, $\frac{1}{7}$ is a rectangle,
   $\frac{4}{7}$ are shaded.
1. Write a fraction and a decimal for the shaded part in the boxes.
   a)  
   b)  
   c)  

2. Show the decimal on the number line with an X.
   a) 0.7 of the distance from 0.0 to 1.0  
   b) 0.3 of the distance from 0.0 to 1.0

3. Write the number into the place value chart.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
<th>Tenths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2033.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>892.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. a) Write a fraction in each blank above the number line.
    b) Write a decimal in each blank below the number line.

   0
   10

   0.0

   c) Which decimal is equal to the fraction?
      i) \( \frac{6}{10} = \)  
      ii) \( \frac{2}{10} = \)  
      iii) \( \frac{10}{10} = \)  
      iv) \( \frac{5}{10} = \)  

5. Write the equivalent words.
   a) 8.3 = ________________________________  
   b) 11.9 = ________________________________
6. Count the shaded tenths. Write the amount two ways.

a)

b)

_____ tenths = _____

_____ tenths = _____
1. a) $\frac{6}{10}, 0.6$
b) $\frac{5}{10}, 0.5$
c) $\frac{7}{10}, 0.7$

2. a) 

\[
\begin{array}{c}
0.0 \\
0.1
\end{array}
\]
b) 

\[
\begin{array}{c}
0.0 \\
0.1
\end{array}
\]

3. 

\[
\begin{array}{cccc}
\text{Th} & \text{H} & \text{T} & \text{O}
\\
a) & 2 & 0 & 3 & 3 \\
b) & & & 0 & 6 \\
c) & & & 6 & 3 \\
d) & 8 & 9 & 2 & 7
\end{array}
\]

4. a) 

\[
\begin{array}{cccc}
\frac{1}{10}, \frac{2}{10}, \frac{3}{10}, \frac{4}{10} \\
\frac{5}{10}, \frac{6}{10}, \frac{7}{10}, \frac{8}{10} \\
\frac{9}{10}, \frac{10}{10}
\end{array}
\]
b) 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0
c) i) 0.6
   ii) 0.2
   iii) 1.0
   iv) 0.5

5. a) eight and three tenths
b) eleven and nine tenths

6. a) 26, 2.6
b) 74, 7.4
1. Add the decimals by lining up the decimal points. You will need to regroup.
   a) $62.8 + 9.3$
   b) $70.8 + 19.4$
   c) $7.4 + 36.5 + 28.6$

2. Subtract the decimals by lining up the decimal points. You will need to regroup.
   a) $53.7 - 8.9$
   b) $18.2 - 12.8$
   c) $70.4 - 15.6$

3. Circle the correct answer.
   a) 17.3 is closer to: 17.0 or 18.0
   b) 9.6 is closer to: 9.0 or 10.0
   c) 57.1 is closer to: 57.0 or 58.0
   d) 0.7 is closer to: 0.0 or 1.0

4. Shade the same amount in the second square. Then count by 10s to write the number of hundredths.
   a) $\frac{4}{10} = \frac{40}{100}$
   b) $\frac{8}{10} = \frac{80}{100}$
5. Shade the fraction.
   a) \(\frac{52}{100}\)  b) \(\frac{4}{10}\)  c) 11 hundredths  d) 9 tenths

6. Write a fraction for the shaded part of the hundreds block. Then write the fraction as a decimal. Hint: Count by 10s for each column or row that is shaded.
   a)  
   b)  
   **BONUS**
1. a) 
\[ \begin{array}{c}
6 & 2 & 8 \\
9 & 3 \\
7 & 2 & 1 \\
\end{array} \]
+ 
\[ \begin{array}{c}
7 & 0 & 8 \\
1 & 9 & 4 \\
9 & 0 & 2 \\
\end{array} \]
\[ \begin{array}{c}
7 & 2 & 1 \\
\end{array} \]

b) 
\[ \begin{array}{c}
1 & 1 \\
\end{array} \]
+ 
\[ \begin{array}{c}
7 & 0 & 8 \\
1 & 9 & 4 \\
9 & 0 & 2 \\
\end{array} \]
\[ \begin{array}{c}
9 & 0 & 2 \\
\end{array} \]

c) 
\[ \begin{array}{c}
2 & 1 \\
7 & 4 \\
3 & 6 & 5 \\
\end{array} \]
+ 
\[ \begin{array}{c}
2 & 8 & 6 \\
\end{array} \]
\[ \begin{array}{c}
7 & 2 & 5 \\
\end{array} \]

2. a) 
\[ \begin{array}{c}
4 & 12 & 1 \\
\end{array} \]
\[ \begin{array}{c}
7 & 4 \\
8 & 9 \\
4 & 4 & 8 \\
\end{array} \]

b) 
\[ \begin{array}{c}
7 & 1 \\
1 & 8 & 2 \\
\end{array} \]
\[ \begin{array}{c}
1 & 2 & 8 \\
5 & 4 \\
\end{array} \]

c) 
\[ \begin{array}{c}
6 & 9 & 1 \\
\end{array} \]
\[ \begin{array}{c}
7 & 4 \\
1 & 5 & 6 \\
5 & 4 & 8 \\
\end{array} \]

3. Circle the following:
   a) 17.0
   b) 10.0
   c) 57.0
   d) 1.0

4. a) 
\[ \begin{array}{c}
40 \\
\end{array} \]

b) 
\[ \begin{array}{c}
80 \\
\end{array} \]

5. a) 
\[ \begin{array}{c}
\end{array} \]

b) 
\[ \begin{array}{c}
\end{array} \]

c) 
\[ \begin{array}{c}
\end{array} \]

d) 
\[ \begin{array}{c}
\end{array} \]

6. a) \[ \frac{60}{100} = 0.6 \]
   b) \[ \frac{44}{100} = 0.44 \]

BONUS
\[ \frac{88}{100} = 0.88 \]
1. Describe the shaded parts in two ways.
   a) 
      
      _____ = _____ ones _____ tenths _____ hundredths
   b) 
      
      _____ = _____ ones _____ tenths _____ hundredths

2. Write the number in expanded form.
   a) 4.67 = _____ + _____ + _____
   b) 35.29 = _____ + _____ + _____ + _____

3. Regroup so that each place value has a single digit.
   a) 4 ones + 16 tenths + 14 hundredths = _____ ones + _____ tenths + _____ hundredths
   b) 15 tenths + 37 hundredths = _____ one + _____ tenths + _____ hundredths

4. Add by lining up the decimal points. You may need to regroup more than once.
   a) 16.82 + 34.09
      
      +
      
   b) 28.97 + 5.35
      
      +
      

5. Subtract by lining up the decimal points. You may need to regroup more than once.
   a) 62.37 − 3.28
      
      −
      
   b) 25.03 − 16.44
      
      −
6. Complete the table.

<table>
<thead>
<tr>
<th>Amount in ¢</th>
<th>Dollars</th>
<th>Dimes</th>
<th>Cents</th>
<th>Amount in $</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) 328¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) 7¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) 68¢</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. You need to pay the given amount. You have a 10-dollar bill. Find the difference owed.

\[
\begin{align*}
\text{Difference owed} & = \boxed{} \\
\end{align*}
\]
1. a) 2.46, 2, 4, 6  
   b) 4.36, 4, 3, 6  
2. a) 4, 0.6, 0.07  
   b) 30, 5, 0.2, 0.09  
3. a) 5, 7, 4  
   b) 1, 8, 7  
4. 
   a) 
   
   1 6 8 2
   + 3 4 0 9
   5 0 9 1
   
   b) 
   
   2 8 9 7
   + 5 3 5
   3 4 3 2
5. 
   a) 
   
   5 1 2 1
   - 2 2 7
   5 9 0 9
   
   b) 
   
   1 14 10 1
   - 1 6 4 4
   8 5 9
6. a) 3, 2, 8, $3.28  
   b) 0, 0, 7, $0.07  
   c) 0, 6, 8, $0.68  
7. 30¢, $2.00, $8.00, $8.30
1. What value does the digit 6 have in the number?
   a) 7625.1 b) 0.6 c) 960.5

2. a) Write a decimal in each blank below the number line.

   \[
   \begin{array}{cccccccc}
   0 & \boxed{1} & 2 & 3 & 4 & 5 \\
   0 & 5 & 5 & 5 & 5 & 5 \\
   \hline
   \end{array}
   \]

   0.0 __ __ __ __ __ __ __ __ __ __ __

   b) Write the decimal that the fraction is equal to.
      i) \( \frac{5}{5} = \) ____ ii) \( \frac{2}{5} = \) ____ iii) \( \frac{4}{5} = \) ____ iv) \( \frac{0}{5} = \) ____

3. Write a decimal in each blank below the number line.

   \[
   \begin{array}{ccccccc}
   29.3 & 29.4 & \boxed{\ldots} & \ldots & \ldots & \ldots & 30.3 \\
   \hline
   \end{array}
   \]

4. Subtract the decimals by lining up the decimal points.
   a) 67.1 − 8.23
   b) 10.41 − 9.5

5. Shade the fraction.
   a) 47 hundredths
   b) \( \frac{3}{10} \)
6. You need to pay the given amount. You have a 10-dollar bill. Find the difference owed.

\[
\text{Difference owed} = \underline{\phantom{10.00}}
\]

7. You need to pay the given amount. You have a 20-dollar bill. Find the difference owed.

\[
\text{Difference owed} = \underline{\phantom{20.00}}
\]
1. a) 600  
b) 6  
c) 60

2. a) 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0  
b) i) 1.0  
   ii) 0.4  
   iii) 0.8  
   iv) 0.0

3. 29.5, 29.6, 29.7, 29.8, 29.9, 30.0, 30.1, 30.2

4. a) 

\[
\begin{array}{cccc}
5 & 16 & 10 & 1 \\
\hline
& & & 0 \\
& 8 & 2 & 3 \\
& 5 & 8 & 8 & 7 \\
\end{array}
\]

b) 

\[
\begin{array}{cccc}
& & & 1 \\
\hline
& & & 4 \\
& 9 & 5 & 0 \\
& 0 & 9 & 1 \\
\end{array}
\]

5. a) 

b) 

6. 90¢, $2.00, $8.00, $8.90

7. 60¢, $13.00, $7.00, $7.60
Unit 11: Patterns and Algebra

Quiz (Lessons 12–15) — MB

Name: ______________________  Date: ________________

1. Draw the missing marbles in the box. Then write the missing number in the smaller box.

a) \[ \begin{array}{c}
\text{○ ○ ○ ○ ○ + \square} = \text{○ ○ ○ ○ ○} \\
5 + \square = 8
\end{array} \]

b) \[ \begin{array}{c}
\text{○ ○ ○ = \square - ○ ○} \\
4 = \square - 3
\end{array} \]

2. Rewrite the multiplication as division, then solve the equation.

a) \[ \square \times 3 = 15 \]

b) \[ 50 = 2 \times \square \]

c) \[ \square \times 21 = 84 \]

3. Write three equations for the table.

a) \[ \begin{array}{c}
\text{18} \\
\text{m}
\end{array} \]

b) \[ \begin{array}{c}
v \\
6
\end{array} \]

# \[ \begin{array}{c}
37 \\
10
\end{array} \]

4. Fill in the table. Write \( x \) for the number you are not given. Circle the part that is larger. Write an equation where the unknown is by itself.

<table>
<thead>
<tr>
<th>Parts</th>
<th>Difference</th>
<th>Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cats</td>
<td>Dogs</td>
<td></td>
</tr>
<tr>
<td>a) 5 dogs; 3 more cats than dogs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) 6 cats; 2 fewer cats than dogs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) 14 dogs; 11 more dogs than cats</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BONUS ►

17 cats; 8 fewer dogs than cats
Unit 11: Patterns and Algebra

Quiz (Lessons 12–15) — MB

1. a) 3
   b) 7

2. a) 5
   15 ÷ 3 = □
   b) 25
   50 ÷ 2 = □
   c) 4
   84 ÷ 21 = □

3. a) 18 = m + 11
   m = 18 − 11
   11 = 18 − m
   b) v = 6 + 23
   23 = v − 6
   6 = v − 23
   c) 37 = 10 + k
   k = 37 − 10
   10 = 37 − k

4. a) x, 5, 3, x = 5 + 3
   b) 6, x, 2, x = 6 + 2
   c) x, 11, 11, x = 14 − 11

BONUS
   17, x, 8, x = 17 − 8
1. Fill in the table. Write \( x \) for the number you need to find. Cross out the information you do not use.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Parts</th>
<th>How Many?</th>
<th>Difference</th>
<th>Total</th>
<th>Equation and Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Sean has 5 kg of apples and 6 kg of pears. How much fruit does he have?</td>
<td>Difference:</td>
<td>Total:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Sandy Beach Camp has 27 red canoes. It has 15 fewer green canoes than red canoes. How many green canoes does the camp have?</td>
<td>Difference:</td>
<td>Total:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Mick can play four times as many songs on the piano as Sara. Mick can play 18 more songs than Sara. How many songs can each person play? Draw the model. Find the size of one block in the model. Then solve the problem.

Mick can play _____ songs and Sara can play _____ songs.

3. Complete the table.

<table>
<thead>
<tr>
<th>Total Number of Things</th>
<th>Number of Sets</th>
<th>Number in Each Set</th>
<th>Multiplication or Division Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) ( x )</td>
<td>5</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>b) 88</td>
<td>4</td>
<td>( x )</td>
<td></td>
</tr>
<tr>
<td>c) 21</td>
<td>( x )</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**BONUS**

| 1000 | 2 | \( x \) |
1. a) apples, 5 kg
   pears, 6 kg
   total: $x$
   $5 + 6 = x$, $x = 11$

   b) red canoes, 27
   green canoes, $x$
   difference: 15
   $27 - 15 = x$, $x = 12$

2. Mick: $\square \square \square$
   Sara: $\square \square \square \square \square \square \square \square \square$
   24, 6

3. a) $5 \times 8 = 40$
   b) $88 \div 4 = 22$
   c) $21 \div 3 = 7$

**BONUS**

$1000 \div 2 = 500$
1. Draw a picture for the equation. Use your picture to solve the equation.
   a) $4 + \square = 9$
   b) $3 = \square - 7$

2. Rewrite the multiplication as division, then solve the equation.
   a) $\square \times 4 = 20$
   b) $64 = 2 \times \square$
   BONUS $\square \times 8 = 800$

3. Circle the total in the story. Then write an equation and solve it.
   a) 12 green grapes
      16 grapes altogether
      x purple grapes
   b) x green grapes
      14 purple grapes
      22 grapes altogether
   c) 17 green grapes
      19 grapes altogether
      x purple grapes

4. Write an equation where the unknown is by itself. Then solve the equation.
   a) Ella hikes 12 km in the morning. She hikes 3 km less in the afternoon. How many kilometres did she hike in the afternoon?

   b) Simon counted 27 sparrows at the bird feeder on Wednesday and 19 sparrows on Thursday. How many more sparrows did he see on Wednesday than on Thursday?
5. Draw the model. Find the size of one block in the model. Then solve the problem.

a) A jacket costs twice as much as a hat. Kim paid $36 for a jacket and a hat. How much did each item cost?

b) A set of guitar strings costs $7. How much do 4 sets of guitar strings cost?

c) Arthur is 15 years old. Arthur is 5 times as old as Mary. How old is Mary?
1. a) 
\[
\begin{array}{c}
4 + 5 = 9 \\
\end{array}
\]

b) 
\[
\begin{array}{c}
3 = 10 - 7 \\
\end{array}
\]

2. a) 5
\[
20 \div 4 = □ \\
64 \div 2 = □
\]

BONUS
100
\[
800 \div 8 = □ \\
\]

3. a) Circle 16 grapes altogether
\[
16 - 12 = x \\
x = 4
\]

b) Circle 22 grapes altogether
\[
22 - 14 = x \\
x = 8
\]

c) Circle 19 grapes altogether
\[
19 - 17 = x \\
x = 2
\]

4. a) 12 - x = 3
\[
12 - 3 = x \\
x = 9
\]

b) 27 - x = 19
\[
x = 27 - 19 \\
x = 8
\]

5. a) Selected solution:
Jacket: $24
Hat: $12
The jacket cost $24 and the hat cost $12.

b) Four sets of guitar strings cost $28.

C) Mary is 3 years old.
Unit 12: Measurement

Quiz (Lessons 13–16) — MB

1. Find the area of the figure in square centimetres.
   
   a)  
   
   Area = ____ cm²
   
   b)  
   
   Area = ____ cm²

2. Ella measured the areas of objects at school, but she forgot to write down the units. Fill in the blanks with “m²” or “cm².”

   a) The board measures 2 ____.  
   b) A book cover measures 375 ____.  
   c) A hundreds block measures 100 ____.  
   d) The field measures 63 ____. 

3. Find the area of the rectangle using the length and width. Include the units.

   a) Length = 7 m  
      Width = 6 m
      Area = _______
   
   b) Length = 9 m  
      Width = 3 m
      Area = _______
   
   c) Length = 4 cm  
      Width = 8 cm
      Area = _______

4. Draw a line to divide the figure into two rectangles. Use the areas of the rectangles to find the total area of the figure.

   a)  
   
   Area of rectangle 1 = _______
   
   Area of rectangle 2 = _______
   
   Total area = _______
   
   b)  
   
   Area of rectangle 1 = _______
   
   Area of rectangle 2 = _______
   
   Total area = _______

BONUS► Find a different way to calculate the area of the shape in Question 4.a).
Did you get the same answer? Why or why not?
Unit 12: Measurement

Quiz (Lessons 13–16) — MB

1. a) 12  
   b) 8

2. a) \(m^2\)  
   b) \(cm^2\)  
   c) \(cm^2\)  
   d) \(m^2\)

3. a) 42 \(m^2\)  
   b) 27 \(m^2\)  
   c) 32 \(cm^2\)

4. a) 6 \(cm^2\)  
    24 \(cm^2\)  
    30 \(cm^2\)
   b) 10 \(m^2\)  
    18 \(m^2\)  
    28 \(m^2\)

BONUS

The area should be the same no matter how it is calculated.
1. Find the area of the figure in square centimetres.

   a) 
   
   Area = ____ cm²

   b) 
   
   Area = ____ cm²

2. Ella measured the areas of objects at school, but she forgot to write down the units. Fill in the missing blanks with "m²" or "cm²."

   a) The window measures 1 ____.   b) The paper measures 585 ____.

3. Find the area of the rectangle using the length and width. Include the units.

   a) Length = 7 cm      Width = 7 cm
   Area = ________

   b) Length = 6 m      Width = 4 m
   Area = ________

   c) Length = 3 cm      Width = 8 cm
   Area = ________
4. Draw a line to divide the figure into two rectangles. Use the areas of the rectangles to find the total area of the figure.

a)

Area of rectangle 1 = _______
Area of rectangle 2 = _______
Total area = _______

b)

Area of rectangle 1 = _______
Area of rectangle 2 = _______
Total area = _______

BONUS► Find the area of the shaded shape using the two rectangles.

Area of rectangle 1 = _______
Area of rectangle 2 = _______
Shaded area = _______
1. a) 15
   b) 8
2. a) m²
   b) cm²
3. a) 49 cm²
   b) 24 m²
   c) 24 cm²
4. a) 6 cm²
   28 cm²
   34 cm²
   b) 6 cm²
   8 cm²
   14 cm²
**BONUS**
24 cm²
2 cm²
22 cm²
1. Write the time the way it looks on a digital clock.
   a) 17 minutes after 5  b) 10 minutes before 9  c) 7 o’clock
      __________ : __________  __________ : __________  __________ : __________

2. Write “a.m.” or “p.m.”
   a) Bedtime is 8:30 _____  b) Breakfast is at 8:30 _____

3. The time is from a 24-hour clock. Write it the way you would for a 12-hour clock.
   a) 15:00  b) 3:25  c) 12:01  d) 20:40
      __________  __________  __________  __________

4. Write the time as it would look on a 24-hour clock.
   a) 1:20 p.m.  b) 7:19 a.m.  c) 10:45 p.m.  BONUS ▶ 12:15 a.m.
      __________  __________  __________  __________

5. Write the time two ways.
   a) __________ : __________
      __________ : __________
      __________ : __________
      __________ : __________

BONUS ▶ Why do you think clock faces are round?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Unit 13: Measurement

Quiz (Lessons 21–23) — MB

1. a) 05:17
   b) 08:50
   c) 07:00
2. a) p.m.
   b) a.m.
3. a) 3:00 p.m.
   b) 3:25 a.m.
   c) 12:01 p.m.
   d) 8:40 p.m.
4. a) 13:20
   b) 07:19
   c) 22:45

BONUS
   00:15
5. a) half past 1
   1:30
   b) quarter to 6
   5:45
   c) quarter past 9
   9:15

BONUS
   Answers will vary. Teacher to check.
1. Draw hands on the clock to show the time.
   a)  
   b)  
   c)  

2. Write the exact time.
   a)  
   b)  
   c)  

3. Write the date using only numbers.
   a) July 5, 1983  
   b) March 5, 2019  
   c) November 21, 2035  

4. Write the date in words.
   a) 1985/10/05  
   b) 2040/05/04  
   c) 1484/02/29  

5. Why is there an international standard for writing dates? Give examples.
1. Teacher to check.

2. 
   a) 7:48
   b) 4:29
   c) 10:11

3. 
   a) 05/07/83
   b) 2019/03/05
   c) 35/11/21

4. 
   a) October 5, 1985
   b) May 4, 2040
   c) February 29, 1484

5. Answers will vary. Sample answer: Because dates can be confusing. The same numbers could be the day, the month, or the year. For example, 04/05/2018 could be April 5, 2018 or May 4, 2018.
Unit 13: Measurement

Test (Lessons 21–25, 28) — MB

Name: ______________________

Date: ________________

1. Write the time in words.
   a) 3:30
   b) 4:27

2. Write “a.m.” or “p.m.”
   a) School starts at 8:30 _____
   b) Dinner is at 6:30 _____

3. The time is from a 24-hour clock. Write it the way you would for a 12-hour clock.
   a) 18:00
   b) 02:25
   c) 12:01
   d) 16:45

4. Write the time as it would look on a 24-hour clock.
   a) 3:35 p.m.
   b) 6:15 a.m.
   c) 11:45 p.m.
   BONUS ▶ 12:15 p.m.

5. Draw hands on the clock to show the time.
   a)
   b)
   c)

6. Write the time two ways.
   a)
   b)
   c)
7. On what day of the week is the date?

<table>
<thead>
<tr>
<th></th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>02</td>
<td>2</td>
<td>3</td>
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</tr>
<tr>
<td>06</td>
<td>30</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

May 2021

7. a) May 5, 2021 _______________ b) 2021-05-22 _______________
    c) 17/05/21 _______________ d) 05 / 16 / 21 _______________
    e) 07/05/2021 _______________ BONUS ▶ 2021-06-07 _______________

8. a) What time is it now? ___________
    b) Is it a.m. or p.m.? ___________
1. a) Sample answer: three thirty
   b) Sample answer: 27 minutes after 4
2. a) a.m.
   b) p.m.
3. a) 6:00 p.m.
   b) 2:25 a.m.
   c) 12:01 p.m.
   d) 4:45 p.m.
4. a) 15:35
   b) 06:15
   c) 23:45
   BONUS
      12:15
5. Teacher to check.
6. a) 33 after 9
   b) 4 after 5
   c) 4 minutes to 1
   BONUS
      Monday
7. a) Wednesday
   b) Saturday
   c) Monday
   d) Sunday
   e) Friday
   BONUS
     Monday
8. Answers will vary. Teacher to check.
Unit 14: Geometry
Quiz (Lessons 10–12) — MB

1. Shade the base of the prism. Then name the prism.

   a)  
   b)  
   c)  
   d)  

   _______ _______ _______ _______

2. Trace and count the edges.

   a)  
   b)  
   c)  
   d)  

   ___ edges ___ edges ___ edges ___ edges

3. Match the net to the 3-D object.

   A.    B.    C.    D.    E.  

   a)  
   b)  
   c)  
   d)  
   e)  

   ____ ____ ____ ____ ____

BONUS ▶ A net has 2 square faces and 4 rectangular faces. What shape does it make? Explain.
1. a) cube  
b) triangular prism  
c) square-based prism  
d) rectangular prism  

2. a) 8  
b) 9  
c) 12  
d) 6  

3. a) E  
b) A  
c) B  
d) D  
e) C  

**BONUS**

It makes a square-based prism because the square faces must be the bases.
1. Shade the base of the prism. Then name the prism.

   a) b) c) d)

   _______  _______  _______  _______

   _______  _______  _______  _______

2. Draw a dot on each vertex. Count the vertices.

   a) b) c) d)

   _____ vertices  _____ vertices  _____ vertices  _____ vertices

3. Match the net to the 3-D object.

   A.  B.  C.  D.  E.

   a) b) c) d) e)

   _____  _____  _____  _____  _____

BONUS ▶ A prism has 6 vertices. What kind of prism is it? Explain.
1. a) square-based prism  
   b) rectangular prism  
   c) triangular prism  
   d) cube  
2. Teacher to check dots.  
   a) 5  
   b) 6  
   c) 8  
   d) 4  
3. a) C  
   b) D  
   c) A  
   d) E  
   e) B  

**BONUS**  
It is a triangular prism  
because the bases each  
have 3 vertices.