








## Self-Assessment for Grade 10 Essentials Math (MAT2L)




Students who are registered for Grade 10 Essentials Math (MAT2L) may benefit from a self evaluation and review of the following expectations from Grade 9 Essentials Math.

The questions in this self-assessment reflect some of the key ideas learned in prerequisite courses. They do not represent the problem solving approach or the rich experience that students would be exposed to in a classroom. The intention is for students to revisit some key concepts and, if needed, access review materials in an informal environment at a pace that is comfortable for the student.

Concept(s)	Sample Question	How comfortable do you feel with this concept?	Links to explore concept further
<b>I can write money values using correct units</b>	1. If you had these coins  How much money in total would you have a) in cents? b) in dollars?	 <input type="checkbox"/> <b>Very comfortable</b>  <input type="checkbox"/> <b>Somewhat comfortable</b>  <input type="checkbox"/> <b>Not at all comfortable</b>	<a href="#">Word problem: making change</a>
<b>I can round money amounts</b>	2. Round the following amounts to the nearest dollar a) \$9.48 b) \$430.73	 <input type="checkbox"/> <b>Very comfortable</b>  <input type="checkbox"/> <b>Somewhat comfortable</b>  <input type="checkbox"/> <b>Not at all comfortable</b>	<a href="#">How To Round To The Nearest Whole Number (Closest Integer)</a>

**I can make correct change**

3. If your bill was \$2.85 and you paid with a ten dollar bill  
 a) How much change would you get back?  
 b) What bills and coins might you get back?

  **Very comfortable**  
  **Somewhat comfortable**  
  **Not at all comfortable**




[Word problem: making change](#)

**I can identify common approximations between fractions and percents.**

**I can write fractions as decimals and decimals as fractions**

4. Complete the chart

Fraction	Decimal	Percent
$\frac{2}{3}$		
	0.5	
		75%










  **Very comfortable**  
  **Somewhat comfortable**  
  **Not at all comfortable**




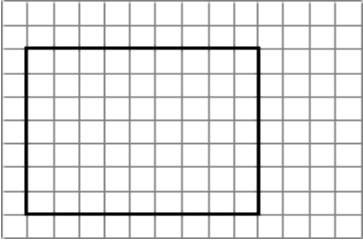



[Worked example: Converting a fraction \(7/8\) to a decimal](#)

[Converting decimals to percents](#)

[Converting percents to decimals](#)

[Converting percents to decimals & fractions example](#)

<p><b>I can solve practical problems involving percent</b></p>	<p>5. A t-shirt costs \$14.99.  a) How much would the tax be if the shirt is taxed at 13%?  b) What would be the total cost of the shirt including the tax?</p>	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Very comfortable</span> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Somewhat comfortable</span> </div> <div style="display: flex; align-items: center;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Not at all comfortable</span> </div> </div>	<p><a href="#">Taxes and Total Cost</a></p>
<p><b>I can solve problems involving equivalent ratios</b></p>	<p>6. A recipe for a dessert that serves 8 people calls for 6 tablespoons of butter. If you were making the dessert for 20 people, how many tablespoons of butter would you need?</p>	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Very comfortable</span> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Somewhat comfortable</span> </div> <div style="display: flex; align-items: center;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Not at all comfortable</span> </div> </div>	<p><a href="#">Equivalent ratio word problems</a></p>
<p><b>I can solve problems involving rates</b></p>	<p>7. If someone runs 5 km in 25 minutes, how far would the person run in an hour at the same rate?</p>	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Very comfortable</span> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Somewhat comfortable</span> </div> <div style="display: flex; align-items: center;">  <input style="margin: 0 10px;" type="checkbox"/> <span>Not at all comfortable</span> </div> </div>	<p><a href="#">Rate problems Intro to rates</a></p>

<p><b>I can convert between metric units</b></p>	<p>8. A carton contains 2L of milk. How many mL of milk are in the carton?</p>	<p>  <input type="checkbox"/> <b>Very comfortable</b>   <input type="checkbox"/> <b>Somewhat comfortable</b>   <input type="checkbox"/> <b>Not at all comfortable</b> </p>	<p><a href="#">Convert liters to milliliters</a></p>
<p><b>I can solve problems involving perimeter, area and volume</b></p>	<p>9. The dark lines in the diagram show a top view of a rectangular room. In the diagram, each small square represents a length of 2 feet and width of 2 feet.</p> <ol style="list-style-type: none"> <li>Find the perimeter of the room.</li> <li>You want to buy baseboard for this room. (Baseboard is a thin strip of wood that goes around the room). There are two doors and each has a width of 3 feet. You do not need baseboard for the doors. If baseboard costs \$0.75 per foot, how much would you spend on baseboard?</li> <li>Find the area of the room.</li> <li>You want to buy tile for this room. Tiles cost \$6 per square foot. How much would you spend on tiles?</li> <li>If the walls are 8 feet tall, what is the volume of the room?</li> </ol> 	<p>  <input type="checkbox"/> <b>Very comfortable</b>   <input type="checkbox"/> <b>Somewhat comfortable</b>   <input type="checkbox"/> <b>Not at all comfortable</b> </p>	<p> <a href="#">Perimeter: introduction</a>  <a href="#">Counting unit squares to find area formula</a>  <a href="#">Volume of a rectangular prism</a> </p>

## Solutions to sample questions

1. If you had these coins



How much money in total would you have

- a) in cents?  $25 + 5 + 25 = 55$  **so you would have 55 cents**  
 b) in dollars? **55 cents is \$0.55**

2. Round the following amounts to the nearest dollar

- a) \$9.48 **Since 48 cents is closer to 0 cents than to 100 cents, \$9.48 rounds to \$9**  
 b) \$430.73 **Since 73 cents is closer to 100 cents than to 0 cents, \$430.73 rounds to \$431**

3. If your bill was \$2.85 and you paid with a ten dollar bill

- a) How much change would you get back?  $10.00 - 2.85 = 7.15$  **so you would get \$7.15 in change**  
 b) What bills and coins might you get back? **You might get a \$5 bill, a toonie, a dime and a nickel. Another option would be to get 3 toonies, 1 loonie, and 3 nickels. There are other options.**

4. Complete the chart

Fraction	Decimal	Percent
$\frac{2}{3}$	0.67	67%
$\frac{5}{10}$ or $\frac{1}{2}$	0.5	50%

$\frac{75}{100}$ or $\frac{3}{4}$	0.75	75%

5. A t-shirt costs \$14.99.

How much would the tax be if the shirt is taxed at 13%?  $14.99 \times 0.13 = 1.95$  **so the tax will be \$1.95**

What would be the total cost of the shirt including the tax?  $14.99 + 1.95 = 16.94$  **so the total cost will be \$16.94 including tax**

6. A recipe for a dessert that serves 8 people calls for 6 tablespoons of butter. If you were making the dessert for 20 people, how many tablespoons of butter would you need?

$20 \div 8 = 2.5$ . **Since we have to multiply the number of people by 2.5, we have to multiply the number of tablespoons of butter by 2.5.**

$6 \times 2.5 = 15$  **so we will need 15 tablespoons of butter**

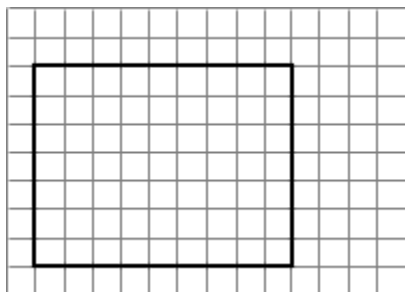
7. If someone runs 5 km in 25 minutes, how far would the person run in an hour at the same rate?

**If someone runs 5 km in 25 minutes, then they can run 1 km in 5 minutes. We know that there are 12 five minute groups in an hour. This means that the person can run 12 km in one hour if the runner maintains the same pace throughout the run.**

8. A carton contains 2L of milk. How many mL of milk are in the carton?

**1 litre is 1000 mL so 2L of milk is 2000 mL.**

9. The dark lines in the diagram show a top view of a rectangular room. In the diagram, each small square represents a length of 2 feet and width of 2 feet.



a) Find the perimeter of the room. **The room is 9 squares by 7 squares. The squares are each 2 feet by 2 feet. This means that the room is  $9 \times 2 = 18$  feet wide and  $7 \times 2 = 14$  feet long. The perimeter is  $18 + 14 + 18 + 14 = 64$  feet.**

b) You want to buy baseboard for this room. (Baseboard is a thin strip of wood that goes around the room). There are two doors and each has a width of 3 feet. You do not need baseboard for the doors. If baseboard costs \$0.75 per foot, how much would you spend on baseboard?

**The perimeter of the room is 64 feet. We need baseboard for  $64 - 3 - 3 = 58$  feet.  $58 \times 0.75 = 43.50$ . You would need to spend \$43.50 on baseboard.**

c) Find the area of the room.

$18 \times 14 = 252$  so the area of the room is 252 square feet.

d) You want to buy tile for this room. Tiles cost \$6 per square foot. How much would you spend on tiles?

$252 \times 6 = 1512$  so you would spend \$1512 on tiles

e) If the walls are 8 feet tall, what is the volume of the room?

The volume is the area of the floor multiplied by the height of the room so the volume is  $252 \times 8 = 2016$  cubic feet.