
















## Self-Assessment for Grade 12 Workplace Math (MEL4E)







Students who are registered for Grade 12 Workplace Math (MEL4E) may benefit from a self evaluation and review of the following expectations from earlier math courses.




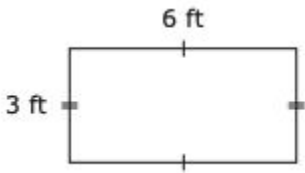



The questions in this self-assessment reflect some of the key ideas learned in prerequisite courses. They do not represent the problem solving approach or the rich experience that students would be exposed to in a classroom. The intention is for students to revisit some key concepts and, if needed, access 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?	Link(s) to explore concept further																		
I can determine equivalent fractions, decimals and percents	<p>1. Without using a calculator, complete this table:</p> <table border="1" data-bbox="483 823 1368 1321"> <thead> <tr> <th data-bbox="483 823 779 890">Fraction</th> <th data-bbox="779 823 1070 890">Decimal</th> <th data-bbox="1070 823 1368 890">Percent</th> </tr> </thead> <tbody> <tr> <td data-bbox="483 890 779 1007"><math>\frac{1}{2}</math></td> <td data-bbox="779 890 1070 1007"></td> <td data-bbox="1070 890 1368 1007"></td> </tr> <tr> <td data-bbox="483 1007 779 1123"><math>\frac{3}{4}</math></td> <td data-bbox="779 1007 1070 1123"></td> <td data-bbox="1070 1007 1368 1123"></td> </tr> <tr> <td data-bbox="483 1123 779 1190"></td> <td data-bbox="779 1123 1070 1190">0.25</td> <td data-bbox="1070 1123 1368 1190"></td> </tr> <tr> <td data-bbox="483 1190 779 1257"></td> <td data-bbox="779 1190 1070 1257">0.01</td> <td data-bbox="1070 1190 1368 1257"></td> </tr> <tr> <td data-bbox="483 1257 779 1321"></td> <td data-bbox="779 1257 1070 1321"></td> <td data-bbox="1070 1257 1368 1321">80%</td> </tr> </tbody> </table>	Fraction	Decimal	Percent	$\frac{1}{2}$			$\frac{3}{4}$				0.25			0.01				80%	<p>How comfortable do you feel with this concept?</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="#">Describing Fractions as Decimals</a></p>
Fraction	Decimal	Percent																			
$\frac{1}{2}$																					
$\frac{3}{4}$																					
	0.25																				
	0.01																				
		80%																			

			13%		
I can round a number to the nearest whole number	<p>2. Round to the nearest dollar:</p> <p>a) \$13.89</p> <p>b) \$29.45</p> <p>c) \$29.50</p>	 <input type="checkbox"/>	<b>Very comfortable</b>	<a href="#">Rounding Money to the Nearest Dollar</a>	
		 <input type="checkbox"/>	<b>Somewhat comfortable</b>		
		 <input type="checkbox"/>	<b>Not at all comfortable</b>		
I can multiply a number by powers of 10 and divide by powers of 10, without a calculator	<p>3. Evaluate without using a calculator:</p> <p>a) <math>1.5 \times 1000</math></p> <p>b) <math>0.975 \times 100</math></p> <p>c) <math>2300 \div 1000</math></p> <p>d) <math>2\,500\,000 \div 1000</math></p>	 <input type="checkbox"/>	<b>Very comfortable</b>	<a href="#">Multiplying a decimal by a power of 10   Decimals   Pre-Algebra   Khan Academy</a>	
		 <input type="checkbox"/>	<b>Somewhat comfortable</b>		
		 <input type="checkbox"/>	<b>Not at all comfortable</b>		

<p>I can convert quantities using the Metric system</p>	<p>4. There are _____ mL in a half-litre.</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="#">Metric system: units of distance   4th grade   Khan Academy</a></p>
<p>I can solve problems given information about the components of total earnings</p>	<p>5. A plumber's assistant makes \$19.80 per hour and gets time-and-a-half if they work more than 44 hours in a week. If an assistant worked 52 hours last week, how much did the assistant make?</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="#">Figure Out Time and a Half Overtime</a></p>

<p>I can calculate discounts, sale prices and after-tax costs</p>	<p>6. A pair of headphones costs \$49.99 but is on sale for “25% off”.  a) What is the sale price of the headphones?  b) Calculate the total cost including 13% tax.</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="#">Percentages</a></p>
<p>I can determine which of two options is a better deal</p>	<p>7. Which is the better buy?  250mL for \$1.99 or 2L for \$9.99</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="#">Unit Rates</a></p>

<p>I can determine actual lengths using a scale</p>	<p>8. A road map uses a scale of 1 cm : 7 km. What is the actual distance between two towns that are 6 cm apart on the map?</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="#">Solving Ratio Problems</a></p>
<p>I can calculate the perimeter and area of a rectangle</p>	<p>9. Find the perimeter and area of the figure.</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="#">Perimeter of Composite Shapes</a>  <a href="#">Area of Composite Shapes</a> </p>

<p>I can calculate the surface area (total area) of a prism</p>	<p>10. The side lengths of a die are 1.5cm. What is the total area of the faces of the die?</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="#">Nets of 3D Objects</a></p>
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Students who take Workplace Math may find it useful to have a working knowledge of spreadsheets. The following tutorials will provide an introduction to Google Sheets.

Intro to Google Sheets: [Google Sheets - Full Tutorial](#)

Create graphs in Google Sheets: [Add & Edit a Chart or Graph](#)

## Solutions to Sample Questions:

1. Without using a calculator, complete this table:

Fraction	Decimal	Percent
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$\frac{1}{2}$	<b>0.5</b>	<b>50%</b>
$\frac{3}{4}$	<b>0.75</b>	<b>75%</b>
$\frac{1}{4}$	0.25	<b>25%</b>
$\frac{1}{10}$	0.01	<b>10%</b>
$\frac{8}{10}$	<b>0.80</b>	80%
$\frac{13}{100}$	<b>0.13</b>	13%

2. Round to the nearest dollar:

a) \$13.89    **\$14.00**

b) \$29.45    **\$29.00**

c) \$29.50    **\$30.00**

3. Evaluate without using a calculator:

a)  $1.5 \times 1000$         **1 500**

b)  $0.975 \times 100$        **97.5**

c)  $2300 \div 1000$        **2.3**

d)  $2\,500\,000 \div 1000 = 2\,500$

4. There are **500** mL in a half-litre.

5. A plumber's assistant earns \$19.80 per hour and gets time-and-a-half if they work more than 44 hours in a week. If an assistant worked 52 hours last week, how much did the assistant earn?

**For the first 44 hours, the assistant earned  $\$19.80 \times 44 = \$871.20$ .**

**For the remaining 8 hours, the assistant earned  $\$19.80 \times 8 \times 1.5 = \$237.60$**

**The total earnings is  $\$871.20 + \$237.60 = \$1108.80$ .**

**Therefore, if the assistant worked 52 hours, they earned \$1108.80**

6. A pair of headphones costs \$49.99 but is on sale for "25% off".

a) What is the sale price of the headphones?

b) Calculate the total cost including 13% tax.

**a) 25% of \$49.99 is  $0.25 \times 49.99$ , which rounds to \$12.50. The price is being reduced by \$12.50, so the sale price becomes \$49.99 - \$12.50.**

**Therefore, the sale price is \$37.49.**

**b) 13% of \$37.49 is \$4.87. This is the amount of tax that must be added.**

**The total cost including tax is  $\$37.49 + \$4.87 = \$42.36$ .**

7. Which is the better buy?

250mL for \$1.99 or 2L for \$9.99

**2L for \$9.99 is the better buy.**



**Method 1: Calculate the unit rate**

250mL for \$1.99 is the same as 125.6mL for \$1

2000mL for \$9.99 is the same as 200.2mL for \$1.

Therefore, you get more for \$1 with the 2L option, making it the better buy.

**Method 2: Compare amounts**

250mL is  $\frac{1}{4}$  of a litre. So there are eight 250mL in 2 litres.

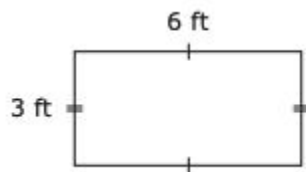
$\$1.99 \times 8 = \$15.92$ , which is much higher than \$9.99.

Therefore, the 2L option is the better buy.

8. A road map uses a scale of 1 cm : 7 km. What is the actual distance between two towns that are 6 cm apart on the map?

**The actual distance between the towns is 42km.**

9. Find the perimeter and area of the figure.



**Perimeter:  $6 + 3 + 6 + 3 = 18$  feet**

**Area:  $6 \times 3 = 18$  square feet**

10. The side lengths of a die are 1.5cm. What is the total area of the faces of the die?



Each face has dimensions 1.5cm by 1.5cm, so the area of one face is  $2.25 \text{ cm}^2$ . The total area (surface area) is  $13.5 \text{ cm}^2$ .