Unit 5: Proportional Reasoning

Final Review Assignment

(3) 1. The speed of a computer can be expressed in MIPS (million instructions per second). A computer unit used for a satellite movie channel can, on average, process about 650 MIPS. The human brain, in comparison, has a processing power equivalent to 100 million MIPS. About how many satellite movie channel computer units are equivalent to the processing power of the human brain?

2. Jim bought a 0.3 L bottle of medicine. The dosage on the bottle is 2.5 mL per 40 kg of body weight.

(3) a. Jim weighs 176 lbs. What dosage of medicine should he take? (1 kg = 2.2 lbs)

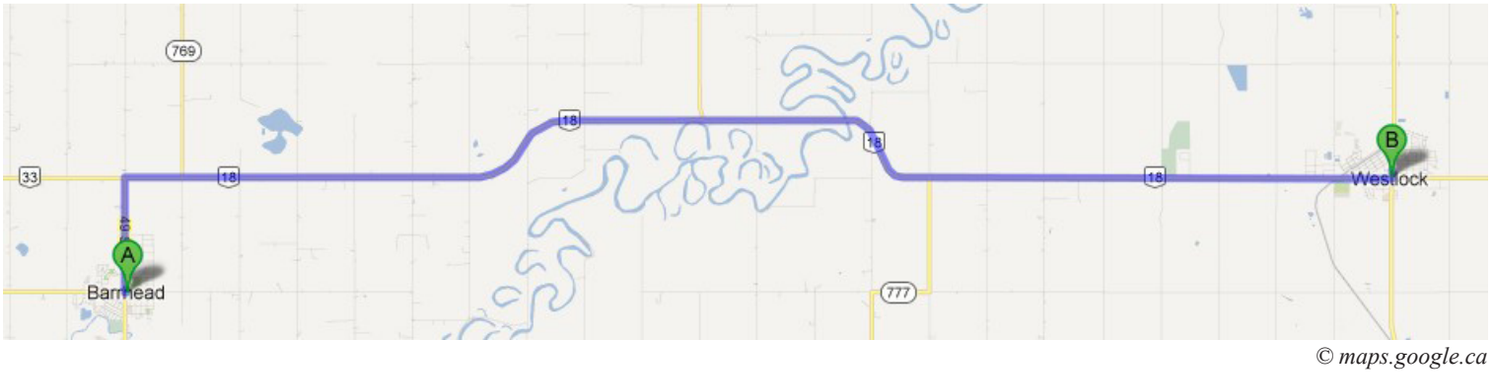
(3) b. How many doses does the bottle hold for someone of Jim's weight? (1 L = 1000 mL)

(3) c. Jim's wife, Susan, needs the same medicine. If Susan weighs 65 kg, how many doses are there for her in the 0.3 L bottle?

(2) 3. Explain when unit rates are useful to make comparisons. Why do unit rates make these comparisons easier?

(4) 4. A map is drawn for a cycling route that is 15 km in length using a scale factor of 0.000 002. Determine the length of the route on the map.

(3) 5. If 1 cm = 2.5 km, what is the distance between Barrhead and Westlock? Hint: Use a string to trace the line on the map and then measure the string.



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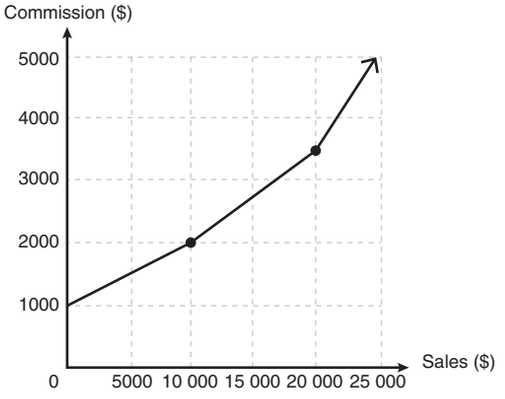
(3) 6. TechnoWorld pays their sales employees using the commission schedule shown.

TechnoWorld Commission Schedule



Determine the commission rate, as a percentage, for the three sections of the graph.

(3) 7. A digital photo measuring 8 inches by 10 inches is enlarged to 175% of its original size for printing purposes. What will be the dimensions of the photo when it is printed?

8. Sydney drew a scale diagram of a circular fire pit in the centre of a circular patio with an actual circumference of 15 m. The circle containing the fire pit is a reduction of the circular patio, by a scale factor of $\frac{1}{3}$. (Circumference = $\pi \times$ diameter)

(4) a. Determine the diameter of the actual fire pit, to the nearest hundredth of a metre.

(2) b. What is the diameter of the fire pit in the scale diagram if the scale factor used was $\frac{2}{15}$?

(3) c. After construction, the raised fire pit will have a surface area of 6.47 m^2. What will be the surface area of a similar fire pit that is enlarged by a scale factor of 3.

(3) d. After construction, the raised fire pit will have a volume of 0.99 m^3. If the volume of the enlargement is 26.73 m^3, what scale factor was used?

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Unit 5: Proportional Reasoning

Use the *Check Point* to check and reflect before completing the *Big Game!* quiz for *Unit 5: Proportional Reasoning*.

I understand how to:

Unit 5 Concepts	Place a checkmark in the appropriate column		
	Yes	**No**	**Maybe**
Interpret and compare rates and unit rates			
Convert rates to different units			
Use graphs to interpret and represent rates			
Explain the solutions to problem involving rates			
Draw scale diagrams of 2-D shapes			
Determine the scale factors for 2-D shapes and 3-D objects			
Determine unknown dimensions given the scale factor of 2-D shapes and 3-D objects			
Solve problems involving factors and scale diagrams			
Determine the area of 2-D shapes given a scale diagram			
Determine the surface area of 3-D objects given a scale diagram			
Explain how scale factor, area, surface area, and volume are related			
Solve problems involving scale factor, area, surface area, and volume			

If you have any concerns from the *Check Point*, please refer to *Strengthening and Conditioning* in the *Module* for designated practice questions and their solutions, to help you improve your skills.

Contact your teacher for assistance and clarification as needed.

You have completed the *Lessons* and *Workbooks* for *Unit 5: Proportional Reasoning*. Please review all work in *Workbook 5B* to ensure it is your best work. Submit *Workbook 5B* for marking at this time and continue your training with the next unit, *Unit 6: Statistics*.

Complete the *Big Game!* quiz when you have reviewed the feedback provided by your marker for *Workbooks 5A* and *5B*.

End Of Workbook 5B