

Math 1010: Practice Questions for Unit #2

To help you prepare for Test #2, complete these practice questions. These questions are similar to those you will see on the test. Complete them as you would on a test and show your work.

- How much is \$47 increased by 120%?
- What number decreased by 38% is \$151.90?
- What percent more than is \$300 of \$80?
- The number of visitors to the local museum this month is 27% more than the number of visitors last month. If the number of visitors at the museum this month is 2,246, what was the attendance last month? Round your answer to the nearest whole visitor?
- Wages at the auto plant over the past three years have seen increases of 0.5%, 1.25% and 2%.
 - What is the hourly wage of a line worker who was earning \$37.50/hour three years ago?
 - What single rate of increase is equivalent to the three years of increases?
- What rate of return is needed in the second year of an investment to double the value of the investment if it earned 35% in the first year?
- Simone purchased shares in Office Apps Ltd. for \$22.50 a share. The shares paid quarterly dividends of \$0.85 and sold one year later for \$21.00. Determine the investment's:
 - Income yield
 - Capital gain yield
 - Rate of total return
- One year ago, Syed invested \$8.50 a share in a local high-tech company. His annual report notes that the share's total rate of return for the year was 18% and the current price of the shares is \$9.75. What amount did the stock distribute as income per unit during the year?
- Express each of the following as a ratio in lowest terms:
 - $42 : 98 : 70$
 - $0.11 : 0.044 : 3.3$
 - $4 \frac{1}{2} : \frac{3}{8}$
 - $\frac{2}{5} : \frac{6}{30} : \frac{1}{15}$
- Solve for x in each of the following:
 - $2.5 : x = 15 : 6$
 - $3.4 : 4.15 = x : 5.33$
 - $x : \frac{3}{8} = \frac{1}{2} : \frac{4}{5}$
- Solve for x and y in each of the following:
 - $15 : 11 : 17 = 12.5 : x : y$
 - $x : 0.06 : y = 9.24 : 0.792 : 0.528$

12. A recipe for scalloped potatoes calls for 5 potatoes, $\frac{1}{2}$ cup of butter and 8 ounces of cheddar cheese. How much butter and cheese are needed if the recipe is adjusted to use 3 potatoes? (Source: <http://allrecipes.com/Recipe/Scalloped-Potatoes>)
13. Philomena paid \$1,562 for auto insurance on her 1962 MGA on May 16, 2016. She sold the car and cancelled her insurance on February 21, 2017. Considering February 21 as a day used, how much of a refund should she get for her annual insurance premium?
14. A large bag of Lays potato chips contains 191 chips. Three friends, Chloe, Lola and Bea want to share the bag by dividing up the chips using the ratio $\frac{1}{4} : \frac{5}{8} : \frac{7}{12}$. How many whole chips should each friend get?
15. Brent, Bart and Brennan share an apartment and divide up the common expenses in a ratio determined by the size of their individual rooms. If their rooms are 168 ft², 255 ft² and 88 ft² respectively:
- How much should Bart contribute to the hydro bill if Brent's payment is \$88.11?
 - How much should Brennan contribute to pay the \$275.00 monthly internet bill?

For questions 16-18, use the following table.

Currency Cost Rates (Noon ET, Toronto, February 25, 2016)				
	Per C\$	Per US\$	Per €	Per £
Canadian dollar (C\$)	---	1.3576	1.4968	1.8914
U.S. dollar (US\$)	0.7366	---	1.1027	1.3933
Euro (€)	0.6681	0.9069	---	1.2637
British pound (£)	0.5287	0.7177	0.7931	---

Source: Jerome & Worswick, 2017, p. 113.

16. How many Euros (€) can you purchase with C\$450?
17. Eugenia wants to purchase £400 (British pounds). What will this cost her in C\$ if there is a 1.2% commission on the transaction?
18. Gas in Naples, FL costs US\$2.47 per gallon and C\$1.30 per litre in Vancouver BC. Where is gas cheaper and by how much in C\$ per litre? (1 gal = 3.7854 litres)
19. How much will it cost in Canadian dollars to purchase €2000 at a bank that charges a 2.2% commission on the transaction? Use an exchange rate of \$1 Canadian = €0.711142.

20. You have returned from Great Britain with £200 left over. How much will you receive from your bank when you convert the currency back to Canadian dollars? The bank charges a 2.8% service charge for this type of transaction. Use this exchange rate: £1 = \$1.657 Canadian dollars.

For questions 21-22, use the following chart.

	Royal Bank		ICE Currency Exchange	
Mid-rate	Buy rate	Sell rate	Buy rate	Sell rate
C\$1.085/US\$1	C\$1.0696/US\$1	C\$1.1025/US\$1	C\$1.0360/US\$1	C\$1.1255/US\$1
C\$1.800/£1	C\$1.7639/£1	C\$1.8481/£1	C\$1.6761/£1	C\$1.9333/£1
C\$1.551/€1	C\$1.5002/€1	C\$1.6027/€1	C\$1.4394/€1	C\$1.6585/€1

Source: Jerome & Worswick, 2017, p.119

21. Based on the exchange rates in the table to the nearest 0.01%, what was the percent transaction cost on your purchase of £250 from each of the Royal Bank and ICE? NOTE: On any currency exchange transaction, ICE applies a C\$3.50 service charge.

22. You returned from your trip to Scotland with £16. Assuming the exchange rates remained the same, what percent transaction cost would you have paid to convert £16 back to C\$ at the Royal Bank and at ICE? NOTE: On any currency exchange transaction, ICE applies a C\$3.50 service charge.

References:

Jerome, F. & Worswick, T. (2017). Business Mathematics in Canada. 9th edition. Toronto, ON: McGraw-Hill Ryerson.