

Name: \_\_\_\_\_  
Student ID: \_\_\_\_\_

## Test 2

This test is graded out of 65 marks. No books, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

**Question 1.** (2 marks)

Express the percent 0.1% as a fraction and as a decimal.

**Question 2.** (4 marks)

Evaluate the following to two decimal places:

1.  $\ln(e^{99})$
2.  $(1.721341)^{\frac{2}{3}}$
3.  $-(0.9388847)^0$
4.  $(0.3374661)^0$

**Question 3.** (4 marks)

Louis Lingg earned \$437.21 for the week. If he receives a base salary of \$250 and has a quota of \$4 500 and a commission of 6.75% on sales that exceed his quota. How much did Louis sell this week.

**Question 4.** (3 marks)

A house in Montreal is evaluated at \$285 000. How much will the property tax cost the owner if the mill rate is 21.21.

**Question 5.** (3 marks)

Simplify the following:

$$11 + \frac{1}{3} \left[ \frac{4^3 - 2(1 - 4)}{3^3 - 3} \right] - \frac{2}{3}$$

**Question 6.** (3 marks)

Simplify the following:

$$2(x - 4)(1 - y) - 5(4x^2 + 9)(y - 3)$$

**Question 7.** (3 marks)

Expand and simplify the following:

$$(2x - 1)^3$$

**Question 8.** (3 marks)

A computer screen is listed at \$600 less 20%. The net price is reduced further to \$420. What is the additional rate of discount?

**Question 9.** (3 marks)

An invoice of \$2 132 was received with terms 3.5/15,  $n/30$ . What amount will reduce the balance to \$1 300 if the amount is paid during the discount period?

**Question 10.** (4 marks)

Ansel's Photo Store sells a Leica camera for \$2 000. The markup is 10% of cost. How much does Ansel pay for the camera? What is the rate of markup based on selling price?

**Question 11.** (3 marks)

A shoe company sells a brand name shoe for \$119.99. If the shoe company wants to markdown the shoe to a price of \$99.99. What is the rate of the markdown?

**Question 12.** (5 marks)

Super Cool Audio buys an MP3/OGG Vorbis player listed at \$430 less 20%, 15% and 5%. Expenses are 35% of the regular selling price, with a net profit of 10% of the regular selling price. What is the regular selling price? During a store sale the MP3 player is advertised with a 20% discount. What is the operating loss or profit realized on the sale of one MP3/OGG Vorbis player?

**Question 13.** (3 marks)

Garry invested \$2 350 for 5 months in a simple interest scheme, with interest at 4.5% p.a.. How much interest did Garry earn in 5 months?

**Question 14.** (3 marks)

Solve for x:

$$-2(x+4) + (x-6) + 3 = 2(3x-1) - 2$$

**Question 15.** (3 marks)

Solve for x:

$$\frac{2}{3}(4x + 5) - \frac{2}{5}(15x - 4) = \frac{11}{10} - x + 3$$

**Question 16.** (3 marks)

George received \$44.01 interest for a deposit of \$5 100 invested for a period of 90 days. What was the rate of interest p.a.?

**Question 17.** (2 marks)

Compute the future value of \$920 over five months at  $3\frac{3}{4}\%$ ?

**Question 18.** (2 marks)

Compute the present value of a debt of \$938.21, 61 days before it is due if money is worth 9.2% p.a.?

**Question 19.** (5 marks)

Emma borrows \$10 000 today from the Half-Bad Bank at a rate of 11%. If Emma is to repay the loan in 3 equal payments the first being in 3 months, the second 6 months and the third in 9 months. What is the size of the equal payments (Emma and the Half-Bad Bank determine that the focal date is today)?

**Question 20.** (4 marks)

The component cost to make an MP3/OGG Vorbis player is seven-ninth of the total cost and labour is one-third of the material cost. If cost of labour is \$19 what is the total cost of the MP3/OGG Vorbis player.

**Bonus Question** (2 marks)

A former AEC student is hired as a manager at David Hilbert's Hotel which is a very large hotel, in fact, it has infinitely many rooms numbered 1, 2, 3, .... The hotel is very popular and every room is occupied one night.

That night a new guest arrives.

-Is there any free room?

-No, the former AEC student said.

-Oh, what a pity, the guest said and started to walk away.

-But wait, you can still get a room.

How can the former AEC student accommodate the guest?