



# The Learning Centre

## Business Math Proficiency Practice Test

This practice test contains 24 questions. The actual test contains 25 questions.  
The use of a calculator is permitted.

Topics for this test include: factoring and expanding, linear equations, ratios and proportions, percentages, graphs of lines, word problems, exponents, systems of equations, arithmetic mean.

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1. Simplify:  $6x - 2(x - 2y) + 2y$

- A.  $2(2x + 3y)$       B.  $4(x - y)$       C.  $4x$       D.  $4(x + y)$       E.  $2(2x - 3y)$

2. If  $\frac{8}{5} = \frac{4}{x}$ , then  $x =$

- A.  $\frac{4}{10}$       B. 2      C.  $\frac{10}{4}$       D.  $\frac{1}{2}$       E. 32

3. At what point does the graph of  $y = 4x - 7$  cross the  $x$ -axis?

- A. 4      B. -7      C.  $\frac{7}{4}$       D.  $\frac{7}{4}$       E. 0

4. The volume of water  $V$  (in litres) in a leaky bucket is given by  $V = \frac{4}{5}t + 10$ , where  $t$  is the length of time (in minutes) from when it was filled. After how many minutes is there only 8 L of water left in the bucket?

- A. 20      B.  $\frac{18}{5}$       C. 15      D. 5A. 20      B.

## Business Math Proficiency Test

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9. A student has 42 coins worth a total of \$5.90. Each coin is either a nickel (five cents) or a quarter (twenty-five cents). If  $x$  is the number of nickels, then an equation that would allow you to determine  $x$  would be:

A.  $0.05x + 0.25(42 - x) = 5.90$

B.  $0.05 + 0.25(42 - x) = 5.90$

C.  $0.05x + 10.50 = 5.90$

D.  $42x = 5.90$

E.  $\frac{x}{0.05} + \frac{42 - x}{0.25} = 5.90$

10. Simplify  $3x^2y \cdot 2x^3y^4 \cdot 2$

A.  $36x^{10}y^6$

Business Math Proficiency Test

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16. Solve the following equation:  $2(3x - 4) + 7 = 3(2 - x)$   
 A. 2                      B.  $\frac{7}{9}$                       C.  $\frac{3}{7}$                       D.  $\frac{7}{6}$                       E.  $\frac{7}{3}$
17. Evaluate  $\frac{S}{(1 + i)^n}$  for  $S = \$2000$ ,  $i = 0.005$ , and  $n = 6$  to the nearest penny.  
 A. \$331.67              B. \$1941.04              C. \$1941.75              D. \$2060.76              E. none of the above
18. An investment earns a periodic rate of interest,  $i$ , of 1.5% each month. Starting with a present value,  $P$  of \$3000, what will the future value,  $F$ , of your investment be in two years? The formula is  $F = P(1 + i)^n$ , where  $n$  is the number of months for the investment.  
 A. \$18750.00              B. \$3090.68              C. \$3967.50              D. \$4288.51              E. none of the above
19. Determine the average (arithmetic mean) of \$160, \$182, \$174, and \$202.  
 A. \$718                      B. \$179.50                      C. \$359                      D. \$186                      E. none of the above
20. To manufacture widgets, it costs \$42.00 to set up a machine, plus \$1.75 per widget for material. Find an expression for the total cost of producing  $x$  widgets.  
 A.  $(\$42.00 + \$1.75) x$   
 B.  $\$42.00x + \$1.75$   
 C.  $(\$42.00 - \$1.75) x$   
 D.  $\$42.00 - \$1.75x$   
 E.  $\$42.00 + \$1.75x$
21. Evaluate:  $2 \frac{1}{10^1} + 3 \frac{1}{10^2} + 4 \frac{1}{10^3}$   
 A. 0.226                      B. 0.234                      C. 0.236                      D. 0.217                      E. 0.483
22. Evaluate:  $\frac{P \sqrt{4 \cdot 2^2 + 6 \cdot 3^2}}{0.544 + 3.22}$   
 A. 2.79                      B. 22.52                      C. 17.14                      D. 19.00                      E. 2.01
23. Solve the following equation for  $x$ :  $400 = 150(2 + 6x)$   
 A.  $\frac{124}{3}$                       B.  $\frac{1}{9}$                       C.  $\frac{1}{3}$                       D.  $\frac{50}{3}$                       E.  $\frac{26}{9}$
24. In Bucks County, the property tax 68(to)-tion for

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Answers:

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|-------|-------|-------|-------|-------|-------|
| 1. A  | 2. C  | 3. C  | 4. D  | 5. B  | 6. B  |
| 7. D  | 8. E  | 9. A  | 10. B | 11. C | 12. D |
| 13. A | 14. C | 15. D | 16. B | 17. B | 18. D |
| 19. B | 20. E | 21. A | 22. E | 23. B | 24. C |