

Prerequisites for MATH 1425, Business Calculus I

MATH 1425 covers several topics in calculus, limits, derivatives, applications of derivatives, integration and an introduction to multivariable calculus. The material presented in this course requires that you have recently completed a College Algebra course or its equivalent. There is no review at the beginning of the course so you need to be comfortable with the basic concepts of algebra from the beginning.

The following problems provide a quick review of this algebra. The answers are listed at the end. If you find that you can't do at least 12 of them right now, you need to do one of two things before you take Business Calculus I.

Get a College Algebra book and review these topics.

If you are unable (or do not have the time) to learn these topics by reviewing on your own, you need to take one, two, or three algebra courses to refresh your algebra skills. The appropriate review course is either MATH 1314, College Algebra, or MATH 1324, Math for Business and Economics. If your algebra skills are really out-of-date, you may need to take one or more developmental math courses to prepare. Consult the Math Advising Web pages or discuss this with an advisor.

1. Simplify: $(5x^3y)(-3x^2y^4)$

2. Simplify: $(2+x)^2$

3. Simplify: $(a+b)^2$

4. Factor: $25t^2 - 16s^2$

5. Factor: $x^2 - 8x - 20$

6. Factor: $2x^2 + 9x + 4$

7. Factor: $t(a-b) - r(a-b)$

8. Simplify: $\frac{x+4}{y} \cdot \frac{y^3}{5x+20}$

9. Simplify: $\frac{8x}{x^2-9} + \frac{4}{5x-15}$

10. Simplify: $\frac{\frac{x}{y}}{\frac{x}{y+1}}$

11. Write in exponential form: $\sqrt[3]{x^5}$

12. Write in exponential form with a negative exponent: $\frac{1}{\sqrt[3]{x^2}}$

13. Write as a single logarithm: $5\ln x - \ln(x+1)$

14. Solve for x : $\log_2 x = 8$

15. Solve for x : $x^2 - 4x = 5$

16. Solve for x : $x^2 - 3x - 1 = 0$

17. Graph: $y = 2x + 3$

18. Graph: $y = 9 - x^2$

Answers:

1. $-15x^5y^5$

2. $4 + 4x + x^2$

3. $a^2 + 2ab + b^2$

4. $(5t - 4s)(5t + 4s)$

5. $(x-10)(x+2)$

6. $(2x+1)(x+4)$

7. $(a-b)(t-r)$

8. $\frac{y^2}{5}$

9. $\frac{4(11x+3)}{5(x-3)(x+3)}$

10. $\frac{y+1}{y}$

11. $x^{5\beta}$

12. $x^{-2\beta}$

13. $\ln \frac{x^5}{x+1}$

14. $x = 3$

15. $x = 5, -1$

16. $x = \frac{3 \pm \sqrt{5}}{2}$

