

Section P.6 Errors and the Algebra of Calculus

Objective: In this lesson you learned how to avoid common algebraic errors and use algebraic techniques common in calculus.

Course Number

Instructor

Date

I. Algebraic Errors to Avoid (Pages 53–54)

Some ways to avoid algebraic errors are . . .

What you should learn

How to avoid common algebraic errors

For each of the following algebraic expressions, describe a potential error that could be made in simplifying the expression.

$$\sqrt{y^3 + 27} \quad \underline{\hspace{10em}}$$

$$w^5 \cdot w^3 \quad \underline{\hspace{10em}}$$

$$7m - 3(m - 2) \quad \underline{\hspace{10em}}$$

$$(25 - 5p)^2 \quad \underline{\hspace{10em}}$$

Example 1: Describe and correct the error.

$$\frac{6x}{36 - 2x^2} = \frac{x}{6} - \frac{3}{x}$$

II. Some Algebra of Calculus (Pages 55–57)

Factor the leading coefficient out of the following expression:

$$3x^2 - 7x + 15 = \underline{\hspace{10em}}$$

What you should learn

How to recognize and use algebraic techniques that are common in calculus

Use fractional exponents to write the following expression as a sum:

$$\frac{4w^3 - 3w^2 + w - 5}{\sqrt{w}} = \underline{\hspace{10em}}$$

Insert the required factors to make the statement true:

$$\frac{16x^2}{9} + \frac{25y^2}{64} = \left(\frac{x^2}{\quad}\right) + \left(\frac{y^2}{\quad}\right)$$

Insert the required factor to make the statement true:

$$\frac{45x^2 - 75}{(x^3 - 5x + 18)^3} = (\quad) \frac{1}{(x^3 - 5x + 18)^3} (3x^2 - 5)$$

Additional Notes

Homework Assignment

Page(s)

Exercises