

Lesson #2: Understanding and Simplifying Variables and Algebraic Expressions using the Product Properties of Exponents
(Reference: Lesson #2 & #3 in Textbook)

Problem

1. Identify the constants and variables in each of the following expressions.

1. $65qrs + 12x$

Variables:

Constants:

2. $4gh - 71yz + 3$

Variables:

Constants:

3. $bc + 2$

Variables:

Constants:

4. Identify the factors, coefficients, variables, and constants in each of the following expressions.

4. $17def + 5j + 2$

Factors:

Coefficients:

Variables:

Constants:

5. $\frac{uv}{4} + 32$

Factors:

Coefficients:

Variables:

Constants:

6. $abc + 3$

Factors:

Coefficients:

Variables:

Constants:

7. Identify the terms in each expression and the parts that make up each expression.

7. $5ax + 42v - \frac{10a}{3}$

1st Term:

2nd Term:

3rd Term:

Factors:

Coefficients:

Variables:

Constants:

8. $\frac{6x}{12} + 18s - 47jk$

1st Term:

2nd Term:

3rd Term:

Factors:

Coefficients:

Variables:

Constants:

9. $x + 3yz - \frac{ad}{4}$

1st Term:

2nd Term:

3rd Term:

Factors:

Coefficients:

Constants:

10. Identify the variables, constants, and number of terms in the following expression:

10. Bill's Bikes uses the expression below to calculate their rental fees:

$$6.50 + 3.25h - 0.75b$$

Identify the Variables:

Identify the Constants:

Identify the Coefficients:

Identify the number of terms in the expression:

11. Simplify each of the following expressions.

11. $\left(\frac{2}{5}\right)^3$

12. $\left(\frac{1}{2}\right)^4$

13. 6^4

14. $(1 \cdot 4)^3$

15. 10^3

16. $w^3 \cdot w^5 \cdot w^4$

17. $v^3 \cdot v^5 \cdot w^2 \cdot w^4$

18. $y^6 \cdot y^5 \cdot z^3 \cdot z^{11} \cdot z^2$

19. $a^4 \cdot b^2 \cdot c \cdot b^4 \cdot c^6 \cdot a$

20. $3x^3 \cdot y^4 \cdot 2z^5 \cdot x \cdot 2y^2 \cdot z$

21. $a^4 \cdot w^2 \cdot 4r^5 \cdot 3w^6 \cdot 2r^3$

22. $5x^2 \cdot y^3 \cdot 2w^5 \cdot 3y^5 \cdot 2x$

23. $\frac{1}{2}a^3 \cdot w^4 \cdot \frac{1}{2}z \cdot 4w^5 \cdot z^8$

24. $x^7 \cdot \frac{1}{4}r^3 \cdot \frac{1}{3}b^5 \cdot r^2 \cdot 12x^6$

25. $\frac{1}{5}s^4 \cdot 3t^3 \cdot m^8 \cdot \frac{5}{6}m \cdot 4t^7$

26. If a supercomputer has a top speed of one EFLOPS which is equal to 10^3 GFLOPS, and if one GFLOPS is equal to 10^6 FLOPS, what is the computer speed in FLOPS?