EXAMPLE

Circle the expression below that is equivalent to \(18 + 24 ÷ (6 − 3)\). Then, evaluate the circled expression.

\[
\frac{18 + 24}{6 - 3} \quad \frac{18 + \frac{24}{6}}{3} \quad \frac{18 + \frac{24}{6}}{3} \quad \frac{18 + 24}{6 - 3}
\]

We can rewrite the division in \(18 + 24 ÷ (6 − 3)\) as a fraction. Since division comes before addition in the order of operations, only 24 is divided by the grouped quantity \((6 − 3)\). So, we have numerator 24 and denominator \(6 − 3\).

Therefore, \(18 + 24 ÷ (6 − 3)\) is equivalent to \(18 + \frac{24}{6 - 3}\).

To evaluate, we compute the denominator of the fraction first, then divide, then add:

\[
\frac{18 + \frac{24}{6 - 3}}{3} = \frac{18 + \frac{24}{3}}{3} = 18 + 8 = 26.
\]

PRACTICE

Connect each expression on the left with its equivalent expression on the right. Then, evaluate the matched expression on the right.

35. \((30 − 20) ÷ (5 − 3)\)

36. \((30 − 20) ÷ 5 − 3\)

37. \(30 − 20 ÷ (5 − 3)\)

38. \(30 − 20 ÷ 5 − 3\)
Remember, when evaluating expressions, we apply the following order of operations:
1. Grouped expressions (numerators, denominators, and expressions inside parentheses or absolute value bars)
2. Exponents
3. Multiplication and division (working from left to right)
4. Addition and subtraction (working from left to right)

PRACTICE  Evaluate each expression below.

39. \( \frac{6+3}{3} + 2 = \) __________
40. \( 5 - \frac{8}{6(4)} = \) __________

41. \( 3 \cdot \frac{7+9}{2} = \) __________
42. \( \frac{3 \cdot 7+9}{2} = \) __________

43. \( \frac{-3(4)}{(6-4)^2} = \) __________
44. \( \frac{20^2}{2} + \frac{20}{2^2} + \left(\frac{20}{2}\right)^2 = \) __________

45. \( 17 - 2\left(\frac{1+11}{2 \cdot 3}\right) = \) __________
46. \( \frac{6^2}{7+5} \cdot \frac{7-6-5}{2} = \) __________

47. \( \frac{8(7-3)^2}{-(3-7)^3} = \) __________
48. \( \left(\frac{5+7+9}{2^3-5^2}\right)^3 = \) __________
A **term** is a number, a variable, or a product of numbers and variables. Terms with the same variables are called **like terms**. For example, $3x$ and $6x$ are like terms, and $-2y$ and $y$ are like terms. However, $5x$ and $5y$ are not like terms.

Numbers without variables, such as 4 and -7, are also like terms.

In a **Like Terms Link** puzzle, each pair of like terms is connected by a path, as shown in the solved example below.

Paths may not travel diagonally, cross another path, or pass *through* a square that contains a term.

### PRACTICE

Solve each Like Terms Link puzzle below. We recommend using a pencil.

*Print more Like Terms Link puzzles at BeastAcademy.com.*

<table>
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</tr>
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<td>6c</td>
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<table>
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<tbody>
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EXAMPLE

Simplify the expression $4a+3a$.

We can combine like terms to simplify expressions. $4a = a+a+a+a$, and $3a = a+a+a$. So, we have:

$$4a + 3a = (a+a+a+a) + (a+a+a) = a + a + a + a + a + a + a = 7a.$$  

—or—

We factor $a$ from each term. This gives

$$4a + 3a = (4+3)a = 7a.$$

PRACTICE

Simplify each of the following expressions.

53. $5x + 4x = \underline{\hspace{2cm}}$

54. $10y - 3y = \underline{\hspace{2cm}}$

55. $3d + 4d + 5d = \underline{\hspace{2cm}}$

56. $s + 3s + 15s = \underline{\hspace{2cm}}$

57. $-3w + 12w = \underline{\hspace{2cm}}$

58. $6p + (-p) = \underline{\hspace{2cm}}$

59. $8c - 14c + 3c = \underline{\hspace{2cm}}$

60. $-22g + 36g - 12g = \underline{\hspace{2cm}}$

61. $12n - 7n - 5n = \underline{\hspace{2cm}}$

62. $93k + 47k - 92k = \underline{\hspace{2cm}}$

63. Write a simplified expression for the perimeter of a square with side length $s$.

64. Write a simplified expression for the perimeter of a rectangle with width $x$ and height $3x$. 

Beast Academy Practice 5A