# Identify Equivalent Algebraic Expressions

Show two expressions are equivalent by combining like terms or testing a number.

**Name** _____ **Date** _____

## Tonight's spark

A party costs $3 per guest for food, $2 per guest for drinks, and $10 for decorations. Dee writes 3x + 2x + 10. Eli writes 5x + 10. Do they always get the same cost?

**Make a guess first: with 4 guests, will Dee and Eli match?**

| Dee's cost: 3x + 2x + 10 | Eli's cost: 5x + 10 |
|---|---|
| x = 2: 20 | x = 2: 20 |
| x = 4: 30 | x = 4: 30 |
| x = 6: 40 | x = 6: 40 |

**Our class model: test a number, then combine like terms**

## Try it

Work it out on paper. Write one answer on each line.

**1** **In 4x + 3 + 2x, which terms are like terms?**

**A.** 4x and 3 **B.** 4x and 2x **C.** 3 and 2x **D.** 4x + 3 and 2x

**My answer** _____

**2** **Combine the like terms: 6y + 2y.**

**A.** 12y **B.** 8 **C.** 62y **D.** 8y

**My answer** _____

**3** **Simplify 5a + 3 + 2a.**

**A.** 7a + 3 **B.** 10a + 3 **C.** 7a **D.** 15a

**My answer** _____

**4** **Which expression is equivalent to 4n + n?**

**A.** $4n^2$ **B.** 4n **C.** 5n **D.** 5

**My answer** _____

**5** **What is the value of 2x + 4 when x = 3?**

**A.** 9 **B.** 10 **C.** 27

**My answer** _____

### Talk about it

Do the two columns give the same value in every row? What do the like terms 4x and 2x combine to?

### Home mission

Say a number of party guests, like 3. Ask your student to work out Dee's cost and Eli's cost out loud. Do they match? Try one more number.

### If we get stuck, ask

- Which terms have the same letter? Those are the ones we can combine.
- Let's put the same number in for the letter in both and see if they match.
- When we combine like terms, we add the numbers in front and keep the letter.

**Do it on a screen**

Scan or type the link. Same lesson, with hints.

**eduwonderlab.com/lessons/6-6/homework.html**

**How did it feel? (optional)**

Tricky Getting there Got it