

Expression Match Lab

Find pairs that always have the same value.

GRADE 6 • 6.EE.A.4

CCSS.Math.Content.6.EE.A.4 "Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example..."

NAME _____

DATE _____

SAME VALUE, EVERY TIME

Two expressions are equivalent if they have the same value for every value of the variable. Use the distributive property and combine like terms to rewrite each expression, then compare the results.

WORKED EXAMPLE

Are $5(n + 3)$ and $5n + 15$ equivalent?

1. Distribute 5: $5(n + 3) = 5n + 15$.
2. The second expression is already $5n + 15$.
3. Both expressions simplify to the same expression.

Answer: Yes, $5(n + 3)$ and $5n + 15$ are equivalent.

PRACTICE 6 problems

- 1** Are $4x + 4x$ and $8x$ equivalent? Write yes or no.

ANSWER _____

- 2** Are $7(a + 2)$ and $7a + 14$ equivalent? Write yes or no.

ANSWER _____

- 3** Are $9m - 6$ and $4(m - 2)$ equivalent? Write yes or no.

ANSWER _____

- 4** Are $2p + 12$ and $2(p + 6)$ equivalent? Write yes or no.

ANSWER _____

- 5** Are $8q + 14$ and $2(4q + 6)$ equivalent? Write yes or no.

ANSWER _____

- 6** Which expression is equivalent to $8t + 16$?
A. $4(2t + 4)$ B. $8(t + 16)$

ANSWER _____

APPLY IT Show your work

- 1** At a robotics fundraiser, each kit earns \$4, and the club gets a \$12 bonus. Jordan writes the total as $4k + 12$. Priya writes the total as $2(2k + 6)$. Are their expressions equivalent? Show how you know.

WORK SPACE

ANSWER _____

- 2** A music app charges \$8 each month plus a \$14 setup fee. Sam writes the cost as $8m + 14$. Lee writes the cost as $2(4m + 6)$. Do the expressions always represent the same cost? Show how you know.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Without substituting a value for x , decide whether $4(2x + 7) + 6$ and $8x + 34$ are equivalent. Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Are $4x + 4x$ and $8x$ equivalent? Write yes or no.	Yes
2	Are $7(a + 2)$ and $7a + 14$ equivalent? Write yes or no.	Yes
3	Are $9m - 6$ and $4(m - 2)$ equivalent? Write yes or no.	No
4	Are $2p + 12$ and $2(p + 6)$ equivalent? Write yes or no.	Yes
5	Are $8q + 14$ and $2(4q + 6)$ equivalent? Write yes or no.	No
6	Which expression is equivalent to $8t + 16$? A. $4(2t + 4)$ B. $8(t + 16)$	A. $4(2t + 4)$

PART 2 • APPLY IT

- Yes. Both expressions simplify to $4k + 12$.** Distribute in Priya's expression: $2(2k + 6) = 4k + 12$. It matches Jordan's expression.
- No. $2(4m + 6)$ simplifies to $8m + 12$, not $8m + 14$.** Distribute in Lee's expression: $2(4m + 6) = 8m + 12$. The setup fee is different, so the expressions are not equivalent.

CHALLENGE

Yes. Distributing gives $4(2x + 7) + 6 = 8x + 28 + 6 = 8x + 34$, so the expressions are equivalent.

Accept equivalent expressions written in a different but correctly simplified form. For explanations, students should show distribution and combining like terms, or clearly state the matching simplified expressions.