

Grade 7 - Equivalent Linear Expressions - Worksheet

Common Core 7.EE.A.1, 7.EE.A.2 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

These 20 problems practice adding, subtracting, factoring, and expanding linear expressions, and rewriting expressions in equivalent forms (Common Core 7.EE.A.1-2). They start with the basic skill, move to different kinds of numbers and multistep work, and end with six word problems set in everyday situations such as shopping, sports, and travel.

Show every step of your work, and use the answer key only after you have tried each problem.

Grade 7 · Common Core State Standards: **7.EE.A.1, 7.EE.A.2**

Exercise 1 - Combine like terms

Simplify $3x + 5x$.

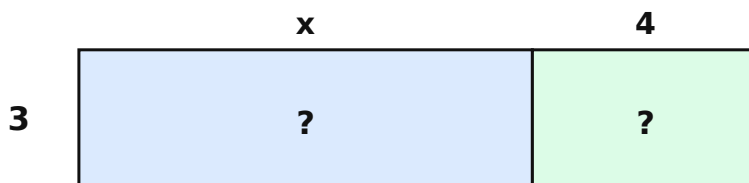
Exercise 2 - Terms and constants

Simplify $7y - 2y + 4$.

Exercise 3 - Group like terms

Simplify $4a + 3 + 2a - 7$.

Exercise 4 - Distribute



Split the rectangle.

Expand $3(x + 4)$.

Exercise 5 - Distribute a negative

Expand $-2(y-5)$.

Exercise 6 - Factor out the GCF

Term	Factors
$6x$	$6 \times x$
12	6×2

Common factor 6.

Factor $6x+12$.

Exercise 7 - Factor with subtraction

Factor $15a-10$.

Exercise 8 - Subtract expressions

Simplify $(7x+3)-(2x-4)$.

Exercise 9 - Add expressions

Simplify $(3x-5)+(2x+9)$.

Exercise 10 - Fraction coefficients

Simplify $\frac{1}{2}x + \frac{3}{4}x$.

Exercise 11 - Decimal coefficient

Expand $0.4(5x-10)$.

Exercise 12 - Expand and combine

Expand and simplify $2(3x+1)+4(x-2)$.

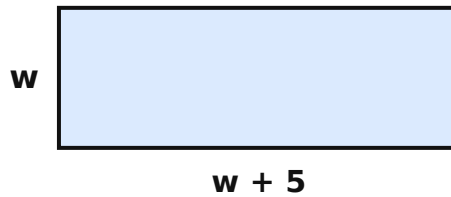
Exercise 13 - Factor a fraction

Factor out $\frac{1}{2}$ from $\frac{1}{2}x+3$.

Exercise 14 - Equivalent or not?

Is $3(2x-4)$ equivalent to $6x-4$? Test with $x=1$, then expand to explain.

Exercise 15 - Perimeter of a rectangle



A rectangle with width w and length $w + 5$.

A rectangle has width w feet and length $w+5$ feet. Write the perimeter as a simplified expression, then find the perimeter when $w=7$.

Exercise 16 - School store

Maya buys n notebooks for \$2.50 each and one pen for \$4. Write an expression for the total cost, and find the cost when $n=6$.

Exercise 17 - Sales tax form

Price	p
Total	p $0.08p$

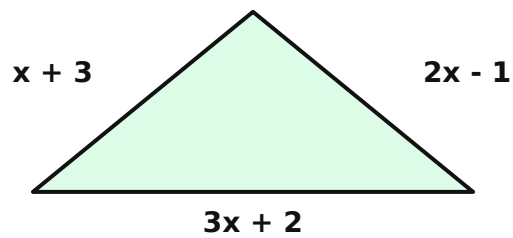
Price and tax.

A price p has 8% sales tax added. Write the total as $p+0.08p$ and as a single product. Then find the total for $p=\$25$.

Exercise 18 - Discount form

A \$48 skateboard is 25% off. Write the sale price as $x-0.25x$ and as one product, with $x=48$.

Exercise 19 - Triangle perimeter



Triangle with three sides.

The sides of a triangle are $x+3$, $2x-1$, and $3x+2$ inches. Write the perimeter in simplest form and find it when $x=5$.

Exercise 20 - Garden area

A garden is 5 feet wide and $x+3$ feet long. Write its area as a product and as a sum, and check both with $x=6$.