

Grade 6 · Writing and Evaluating Algebraic Expressions · Worksheet Answer Key

Common Core 6.EE.A.2, 6.EE.A.3, 6.EE.A.4 · mathovore.fr

This answer key gives complete worked solutions for the algebraic expressions worksheet. Each solution shows the substitution or the property that was used, and every final answer is in bold so students can check their own work quickly.

Grade 6 Common Core: 6.EE.A.2 · 6.EE.A.3 · 6.EE.A.4

Problem 1: Parts of an Expression

- a. The terms are $7x$, $4y$, and 9: **3 terms**
- b. The coefficient of x is **7**
- c. The coefficient of y is **4**
- d. The term with no variable is **9**

Problem 2: Writing Simple Expressions

- a. n plus 8: $n+8$
- b. y minus 6: $y-6$
- c. 5 times m : $5m$
- d. k over 4: $\frac{k}{4}$

Problem 3: Writing Longer Expressions

- a. Sum first, then double: $2(x+7)$
- b. $3a$, then subtract 2: $3a-2$
- c. 20 divided by p : $\frac{20}{p}$
- d. The product is $4t$; 9 less than it is $4t-9$

Problem 4: Evaluating Expressions

- a. $6+9=15$
- b. $4\times6=24$
- c. $30\div6=5$
- d. $3\times6-5=18-5=13$

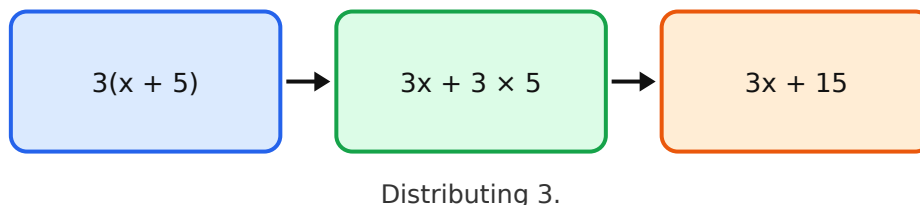
Problem 5: Exponents and Formulas

- a. $7^2=49$

- b. $5 \times 4^2 - 10 = 5 \times 16 - 10 = 80 - 10 = 70$
 c. $V = 5^3 = 125$. Answer: 125 ft^3
 d. $A = 6 \times \left(\frac{1}{2}\right)^2 = 6 \times \frac{1}{4} = \frac{6}{4} = \frac{3}{2} \text{ in}^2$, or 1.5 square inches

Problem 6: Distributive Property

- a. $3 \times x + 3 \times 5 = 3x + 15$
 b. $4 \times 2y + 4 \times 1 = 8y + 4$
 c. The greatest common factor of 6 and 9 is 3: $3(2x + 3)$
 d. The greatest common factor of 10 and 15 is 5: $5(2 + 3m)$



Problem 7: Combining Like Terms

- a. $7 + 3 = 10$: $10a$
 b. $9 - 4 = 5$: $5b$
 c. $2x + 6x = 8x$ and $5 + 1 = 6$: $8x + 6$
 d. $3y + y + 2y = 6y$, so the result is $6y + 4$

Problem 8: Dog Walking Pay

Pay for h hours is $12h$, plus the \$5 tip: $12h + 5$.

When $h = 6$: $12 \times 6 + 5 = 72 + 5 = 77$.

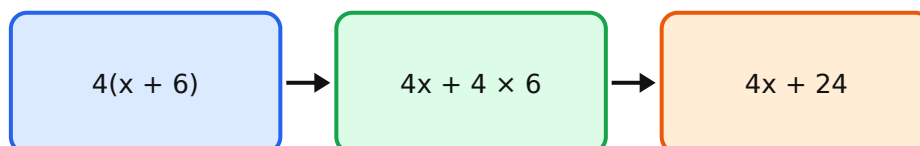
Total pay: $12h + 5$; **\$77**

Problem 9: Flower Bed Area

Area is width times length: $4(x + 6)$. By the distributive property, $4(x + 6) = 4x + 24$.

Check with $x = 3$: $4(3 + 6) = 4 \times 9 = 36$, and $4(3) + 24 = 12 + 24 = 36$. Both give 36.

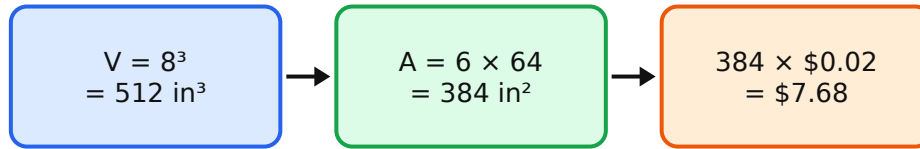
Equivalent expressions: $4(x + 6)$ **and** $4x + 24$



Two equivalent area expressions.

Problem 10: Gift Box

- a. $V = 8^3 = 8 \times 8 \times 8 = 512$. Answer: 512 in^3
- b. $A = 6 \times 8^2 = 6 \times 64 = 384$. Answer: 384 in^2
- c. $\text{Cost} = 384 \times \$0.02 = \$7.68$. Answer: $\$7.68$



Gift box results.