

Expression Makeover

Rewrite expressions to reveal how quantities are connected.

GRADE 7 • 7.EE.A.2

CCSS.Math.Content.7.EE.A.2 "Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example..."

NAME _____

DATE _____

SEE THE RELATIONSHIP

Equivalent expressions have the same value, even when they look different. Combine like terms, distribute, factor, or use a multiplier to show a relationship more clearly. For percent changes, the multiplier shows what part of the original amount remains or grows.

WORKED EXAMPLE

Rewrite $6t + 2t$ as one term.

1. Both terms have t .
2. Add the coefficients: $6 + 2 = 8$.
3. Write $8t$.

Answer: $8t$

PRACTICE 6 problems

- 1** Rewrite $0.4x + 0.6x$ as one term.

ANSWER _____

- 2** Use the distributive property to rewrite $3(y + 5)$ without parentheses.

ANSWER _____

- 3** Factor $15n + 20$ using the greatest common factor.

ANSWER _____

- 4** Rewrite $p - 0.25p$ as one term.

ANSWER _____

- 5** A game costs g dollars. Its price increases by 10%. Rewrite $g + 0.10g$ as a single multiplier times g .

ANSWER _____

- 6** A hoodie costs h dollars. It is discounted 30%. Rewrite $h - 0.30h$ as a single multiplier times h .

ANSWER _____

APPLY IT Show your work

- 1** An online game pass costs \$40. A sale takes 15% off. Write an expression using one multiplier times 40, then find the sale price.

WORK SPACE

ANSWER _____

- 2** For a school tournament, a team raises \$35 from donations. A sponsor adds 40% of that amount. Rewrite $35 + 0.40(35)$ as one multiplier times 35, then find the total.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A music app subscription costs p dollars. The price rises 50%, then a coupon takes 10% off the increased price. Rewrite the final price as one multiplier times p . Is the final price greater or less than p , and by what percent?

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Rewrite $0.4x + 0.6x$ as one term.	x
2	Use the distributive property to rewrite $3(y + 5)$ without parentheses.	$3y + 15$
3	Factor $15n + 20$ using the greatest common factor.	$5(3n + 4)$
4	Rewrite $p - 0.25p$ as one term.	$0.75p$
5	A game costs g dollars. Its price increases by 10%. Rewrite $g + 0.10g$ as a single multiplier times g .	$1.10g$
6	A hoodie costs h dollars. It is discounted 30%. Rewrite $h - 0.30h$ as a single multiplier times h .	$0.70h$

PART 2 • APPLY IT

- $0.85(40) = \$34$** A 15% discount leaves 85% of the original price. Multiply 40 by 0.85 to get \$34.
- $1.40(35) = \$49$** The original amount plus 40% is 140% of the original amount. Multiply 35 by 1.40 to get \$49.

CHALLENGE

$1.35p$; the final price is greater than p by 35%.

Accept equivalent forms such as $1.1g$ for $1.10g$ and $0.7h$ for $0.70h$. For the challenge, accept $1.5(0.9p)$ if the student also identifies the combined multiplier as 1.35.