

Rewrite to Solve

Use properties to make calculations easier.

GRADE 6 • MA.6.NSO.3

MA.6.NSO.3 "Apply properties of operations to rewrite numbers in equivalent forms."

NAME _____

DATE _____

EQUIVALENT FORMS

Use the distributive property to break one factor across a sum or difference: $a(b + c) = a*b + a*c$. You can also switch or regroup addends and factors to make an expression easier while keeping the value the same.

WORKED EXAMPLE

Find $7(80 + 6)$.

1. Break 7 across the sum: $7(80 + 6) = 7*80 + 7*6$.
2. Multiply each part: $7*80 + 7*6 = 560 + 42$.
3. Add the partial products: $560 + 42 = 602$.

Answer: 602

PRACTICE 6 problems

- 1** Use the distributive property to find $4(30 + 9)$.

ANSWER _____

- 2** Rewrite $23*12$ using the distributive property. Then find the product.

ANSWER _____

- 3** Use the commutative and associative properties to add $18 + 35 + 82$.

ANSWER _____

- 4** Find $16*25$ by rewriting 16 as $4*4$ and grouping the factors.

ANSWER _____

- 5** Rewrite $99 + 47$ to make a friendly sum. Then find the sum.

ANSWER _____

- 6** Use the distributive property to find $15*34$.

ANSWER _____

APPLY IT Show your work

- 1** A gaming club has 12 members. Each member earns 18 points for completing a quest and 2 bonus points for teamwork. Use a property of operations to find the total number of points earned.

WORK SPACE

ANSWER _____

- 2** A sports store sells 15 team water bottles. Each bottle costs \$16, and printing a name costs \$4 more per bottle. Use a property of operations to find the total cost.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Find 48×25 without using the standard multiplication algorithm. Show an equivalent expression that makes the calculation easier.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Use the distributive property to find $4(30 + 9)$.	$4*30 + 4*9 = 120 + 36 = 156$
2	Rewrite $23*12$ using the distributive property. Then find the product.	$23*(10 + 2) = 230 + 46 = 276$
3	Use the commutative and associative properties to add $18 + 35 + 82$.	$18 + (35 + 82) = 18 + 117 = 135$
4	Find $16*25$ by rewriting 16 as $4*4$ and grouping the factors.	$(4*4)*25 = 4*(4*25) = 4*100 = 400$
5	Rewrite $99 + 47$ to make a friendly sum. Then find the sum.	$(99 + 1) + 46 = 100 + 46 = 146$
6	Use the distributive property to find $15*34$.	$15*(30 + 4) = 450 + 60 = 510$

PART 2 • APPLY IT

1. **240 points** Write $12(18 + 2)$. Add inside the parentheses, then multiply: $12*20 = 240$.
2. **\$300** Write $15(16 + 4)$. Add inside the parentheses, then multiply: $15*20 = 300$.

CHALLENGE

$$48*25 = (12*4)*25 = 12*(4*25) = 12*100 = 1200$$

Accept any equivalent expression that correctly uses the distributive, commutative, or associative property and gives the correct value. For the challenge, accept any valid regrouping that creates an easier product, such as $4*25 = 100$.