



Rewriting expressions to reveal relationships

GRADE 7 MATH

Name _____

Date _____

Work in order. Give the rewritten form and say what it reveals. One skill: **rewriting expressions**.

WORKED EXAMPLE

Increase by $p\%$: multiply by $1 + p/100$. Decrease by $p\%$: multiply by $1 - p/100$. Writing a change as a single multiplier lets you **chain** changes by multiplying the factors together.

1. Write “x increased by 10%” as a single multiplication.

FLUENCY

Show your thinking

Answer

2. Find the result when $x = 300$.

FLUENCY

Show your thinking

Answer

3. Write “x decreased by 15%” as a single multiplication.

FLUENCY

Show your thinking

Answer

4. Find the result when $x = 200$.

FLUENCY

Show your thinking

Answer

5. Explain what the multiplier in question 3 tells you about the percentage that remains.

REASONING

Show your thinking

Answer

6. A price rises 10%, then rises 10% again. Write this as one multiplication.

APPLICATION

Show your thinking

Answer

7. Is your answer to question 6 the same as a single 20% rise? Show why or why not.

REASONING

Show your thinking

Answer

8. Apply your answer to question 6 to a price of \$100.

APPLICATION

Show your thinking

Answer

9. What single percentage rise is equivalent to two 10% rises? Explain where the extra comes from.

REASONING

Show your thinking

Answer