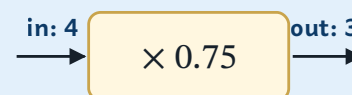


Direct proportion and the unitary method

MODULE 4 · RATIO AND PROPORTION NUMBER

In **direct proportion**, as one amount grows the other grows at the same rate. The **unitary method** finds the value of **one** first.

→ 3 pens cost €1.50 → 1 pen = €0.50 → 7 pens = **€3.50**.



IF 4 PENS COST €3, WHAT DO 10 COST?

- 1 Find the cost of **one**: $€3 \div 4 = \text{€}0.75$.
- 2 Then multiply: $10 \times €0.75 = \text{€}7.50$.

HOW TO ANSWER TODAY

- **Share in a ratio.** Add the ratio parts. Divide the total by that number to find ONE part. Multiply each ratio number by it.

Share €90 in 2:3 → 5 parts, $€90 \div 5 = \text{€}18$ per part → €36 and €54

WARM-UP

- 1 Aoife buys **2** reflective armbands at the school office for **€6** in total to wear on her walk to school. She wants to bring enough for **6** pupils in her walking group. Using the unitary method, how much will **6** armbands cost?
If 2 identical items cost €6, what do 6 items cost (use the unitary method)?
- 2 Tadhg buys **4** identical lunchbox sandwiches at the school canteen for **€8** in total. The next week he orders **7** of the same sandwiches for his GAA team snack. Using the unitary method, what do the **7** sandwiches cost?
If 4 identical items cost €8, what do 7 items cost (use the unitary method)?

PRACTICE

- 1 For an art lesson, 5th class are buying small sketchpads to draw a scale plan of the school yard. **6** sketchpads cost **€18** in the local SuperValu. Using the unitary method, what would **9** sketchpads cost?
If 6 identical items cost €18, what do 9 items cost (use the unitary method)?
- 2 At the school book fair, **3** paperback novels cost **€15** in total. Tadhg's 5th class teacher wants to buy **10** of the same novels for the classroom library. Using the unitary method, how much will **10** novels cost?
If 3 identical items cost €15, what do 10 items cost (use the unitary method)?

CHALLENGE

- 1 Niamh and her brother stop at the Centra near the cinema, where **4** identical popcorn bags cost **€32** in total. They want to bring **15** bags to share with their cousins after the film. Using the unitary method, what do **15** bags cost?
If 4 identical items cost €32, what do 15 items cost (use the unitary method)?
- 2 5th class raise **€100** at the school bake sale to put towards their class trip. They share the money between buns, brownies and rocky road in the ratio **2:3:5** to plan next week's bake. How much money goes to each item?