The product rule for counting

Exit ticket ANSWERS Name _____

1. A drink is one of 5 flavours, in a small, medium or large cup. How many different drinks are there?

$5 \times 3 = 15$

2. A code is a letter from A to F, then two digits from 1 to 4. Digits can repeat. How many codes are there?

$6 \times 4 \times 4 = 96$

3. A first prize and a second prize go to 2 of 10 students. No student wins both. In how many ways can the prizes be given?

$10 \times 9 = 90$

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Exit ticket The product rule for counting

NEXT LESSON

1 **A drink is one of 5 flavours, in a small, medium or large cup. How many different drinks are there?**

5 × 3 = 15

TESTS Two choices: multiply

LOOK FOR
- *8* 5 + 3: the choices added, not multiplied
- *5 or 3* only one step counted: each flavour comes in 3 cups

FIX IT A T shirt comes in 4 colours and 6 sizes. How many different T shirts are there? *4 × 6 = 24*

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2 **A code is a letter from A to F, then two digits from 1 to 4. Digits can repeat. How many codes are there?**

6 × 4 × 4 = 96

TESTS Three choices, repeats allowed: one box for each choice

LOOK FOR
- *14* 6 + 4 + 4: the choices added
- *24* 6 × 4: one box for each choice, so two boxes for the two digits

FIX IT A code is a letter from A to C, then two digits from 0 to 9. Digits can repeat. How many codes are there? *3 × 10 × 10 = 300*

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3 **A first prize and a second prize go to 2 of 10 students. No student wins both. In how many ways can the prizes be given?**

10 × 9 = 90

TESTS No repeats: one fewer choice each time

LOOK FOR
- *100* 10 × 10: the same student cannot win both, so 9 are left for second
- *19* 10 + 9: the choices added, not multiplied

FIX IT Six runners are in a race. In how many ways can first, second and third place be filled? *6 × 5 × 4 = 120*