

Grade 5 - Multiplication as Scaling - Quiz

Common Core 5.NF.B.5a, 5.NF.B.5b · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

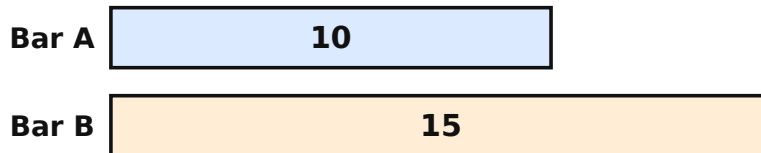
Answer these 10 multiple-choice questions about multiplication as scaling. Each question has one correct answer. Compare each scale factor with 1 before you calculate, then read the explanation after each answer.

Grade 5 · Common Core State Standards: **5.NF.B.5a, 5.NF.B.5b**

Questions

Question 1

Bar B is the product of 10 and a scale factor. Which multiplication shows it?



Bar B is longer than bar A.

- A. $10 \times \frac{1}{2}$
- B. $10 \times \frac{3}{2}$
- C. $10 \times \frac{1}{3}$
- D. $10 \times \frac{2}{3}$

Question 2

Which product is less than 9?

- A. $9 \times \frac{1}{2}$
- B. $9 \times \frac{1}{3}$
- C. $9 \times \frac{2}{3}$
- D. $9 \times \frac{3}{2}$

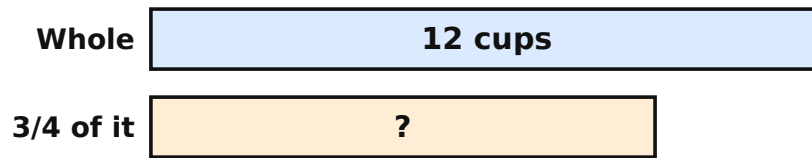
Question 3

Which product equals 14?

- A. $14 \times \frac{6}{6}$
- B. $14 \times \frac{6}{7}$
- C. $14 \times \frac{7}{6}$
- D. $14 \times \frac{1}{6}$

Question 4

The shorter bar is $\frac{3}{4}$ of 12 cups. How many cups is that?



The shorter bar is $\frac{3}{4}$ of the longer bar.

- A. 16
- B. 9
- C. 15
- D. 4

Question 5

Find $4 \times \frac{5}{2}$.

- A. $1\frac{3}{5}$
- B. $6\frac{1}{2}$
- C. 2
- D. 10

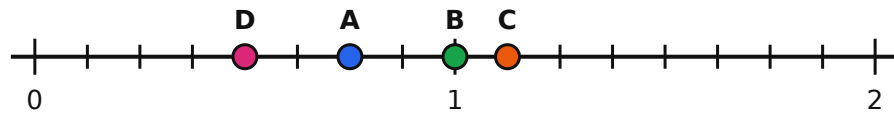
Question 6

Which statement is true about $\frac{2}{3} \times \frac{4}{5}$?

- A. It is greater than both factors.
- B. It is equal to $\frac{2}{3}$.
- C. It is greater than $\frac{4}{5}$.
- D. It is less than both factors.

Question 7

Which point on the number line shows a scale factor that makes ~~6~~*the factor* greater than 6?



Four possible scale factors.

- A. Point A
- B. Point B
- C. Point C
- D. Point D

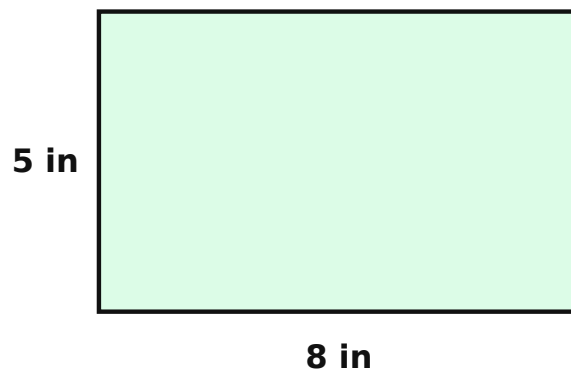
Question 8

Maya's cake recipe uses 3 cups of sugar. She makes $1\frac{1}{2}$ times the recipe. How much sugar does she need?

- A. $4\frac{1}{2}$ cups
- B. 2 cups
- C. $1\frac{1}{2}$ cups
- D. $3\frac{3}{4}$ cups

Question 9

A rectangle is 8 inches long. A new rectangle is $\frac{3}{4}$ as long. How long is the new rectangle?



A rectangle.

- A. $10\frac{2}{3}$ inches
- B. $8\frac{3}{4}$ inches
- C. 6 inches

D. 11 inches

Question 10

Jamal's dog weighs 40 pounds. Sam's dog weighs $\frac{5}{4}$ as much. Which statement is correct?

- A. Sam's dog weighs 50 pounds.
- B. Sam's dog weighs 32 pounds.
- C. Sam's dog weighs 45 pounds.
- D. Both dogs weigh 40 pounds.

Answers

1. **B** – Bar B is longer than bar A, so the factor is greater than 1. $10 \times \frac{3}{2} = 15$.
2. **B** – Only $\frac{7}{8}$ is less than 1. The other factors are greater than 1, so their products are greater than 9.
3. **A** – $\frac{6}{6}$ equals 1, and multiplying by 1 keeps the number the same.
4. **B** – $12 \times \frac{3}{4} = \frac{36}{4} = 9$. Since $\frac{3}{4}$ is less than 1, the answer must be less than 12. The answer 16 comes from multiplying by $\frac{4}{3}$.
5. **D** – $4 \times \frac{5}{2} = \frac{20}{2} = 10$. Because $\frac{5}{2}$ is greater than 1, the answer is greater than 4.
6. **D** – Both factors are less than 1, so the product is smaller than each factor. $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$.
7. **C** – Point C is $\frac{9}{8}$, which is greater than 1. Points A and D are less than 1, and point B equals 1.
8. **A** – $3 \times \frac{3}{2} = \frac{9}{2} = 4 \frac{1}{2}$. The factor is greater than 1, so Maya needs more than 3 cups. Dividing gives 2, which is the wrong operation.
9. **C** – $8 \times \frac{3}{4} = 6$. The factor $\frac{3}{4}$ is less than 1, so the new length must be less than 8.
10. **A** – $40 \times \frac{5}{4} = 50$. The factor $\frac{5}{4}$ is greater than 1, so Sam's dog is heavier. Adding 5 gives 45, which is not the same as multiplying.

Remember

- A scale factor greater than 1 makes the product larger.
- A scale factor equal to 1 leaves the product the same.
- A scale factor less than 1 makes the product smaller.
- A fraction times a fraction less than 1 is smaller than both factors.
- Compare the factor to 1 to predict the size before you calculate.