

Scaling Up & Scaling Down

Name: _____

A ratio is a comparison of two quantities. We can create more equivalent ratios by “scaling up” or “scaling down.”

Example: 4 : 5

Scaling Up $4 \times 2 : 5 \times 2 = 8 : 10$ Scaling Down $4 \times 1/3 : 5 \times 1/3 = 4/3 : 5/3$

1. Scaling Up $4.5 : 0.23 = 4.5(3) : 0.23(3) =$ _____
2. Scaling Down $18 : 4.6 = 18(1/2) : 4.6(1/2) =$ _____
3. What scale factor was used to change from one ratio to the other?
 - a. $5 : 18 = 15 : 54$ _____
 - b. $24 : 45 = 8 : 15$ _____
 - c. $4.5 : 7.3 = 11.25 : 18.25$ _____
 - d. $10.8 : 6.2 = 5.4 : 3.1$ _____
4. Peter’s backyard is 90 ft by 120 ft. He wants to take a one-third of his yard to use as a garden. However, he wants to keep the same ratio of length to width. Scale down the dimensions of the backyard to give Peter the length and width of his garden. _____
5. Vanessa is making smoothies. She usually uses 4 cups of strawberries for every 3 cups of blueberries.
 - a. What are the key words used that show that this is a ratio? _____
 - b. Write a ratio of strawberry to blueberry. _____
 - c. Vanessa’s typical recipe makes 8 servings. If she wants to make 40 servings, what scale factor should Vanessa use to scale up her recipe ingredients? _____
 - d. Scale up Vanessa’s recipe to feed 40 people. _____
 - e. The next week, Vanessa wanted to make the recipe again, but this time only for two people. What scale factor can be used to change the recipe to make two servings instead of 8? _____
 - f. Scale down Vanessa’s recipe to feed 2 people. _____

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Example: 4 : 5

Scaling Up $4 \times 2 : 5 \times 2 = 8 : 10$ Scaling

Down $4 \times 1/3 : 5 \times 1/3 = 4/3 : 5/3$

1. Scaling Up $4.5 : 0.23 = 4.5(3) : 0.23(3) =$

1. 13.5 : 0.69

2. Scaling Down $18 : 4.6 = 18(1/2) : 4.6(1/2) =$

2. 9 : 2.3

3. What scale factor was used to change from one ratio to the other?

a. $5 : 18 = 15 : 54$

3a. 3

b. $24 : 45 = 8 : 15$

3b. 1/3

c. $4.5 : 7.3 = 11.25 : 18.25$

3c. 2.5

d. $10.8 : 6.2 = 5.4 : 3.1$

3d. 1/2

4. Peter’s backyard is 90 ft by 120 ft. He wants to take a one-third of his yard to use as a garden. However, he wants to keep the same ratio of length to width. Scale down the dimensions of the backyard to give Peter the length and width of his garden.

4. 30ft by 40 ft

5. Vanessa is making smoothies. She usually uses 4 cups of strawberries for every 3 cups of blueberries.

a. What are the key words used that show that this is a ratio?

5a. for every

b. Write a ratio of strawberry to blueberry.

5b. 4:3

c. Vanessa’s typical recipe makes 8 servings. If she wants to make 40 servings, what scale factor should Vanessa use to scale up her recipe ingredients?

5c. 5

d. Scale up Vanessa’s recipe to feed 40 people.

5d. 20 : 15

e. The next week, Vanessa wanted to make the recipe again, but this time only for two people. What scale factor can be used to change the recipe to make two servings instead of 8?

5e. 1/2

f. Scale down Vanessa’s recipe to feed 2 people.

5f. 2 : 1.5