

Meet the Balance Scale

1. On a balance scale, we can balance 2 identical watermelons on one side and an 8 pound weight on the other. How much does a watermelon weigh? Start by drawing the watermelons and the weight on the picture below.

Weight of 1 Watermelon: 4 lbs

2. The weight of 2 identical grapefruits equals to the weight of a grapefruit plus a 1 pound weight. How much does a grapefruit weigh?

Weight of 1 Grapefruit: 1 lb

3. The weight of 3 identical pumpkins equals to the weight of 1 pumpkin plus a 6 pound weight. How much does a pumpkin weigh?

Weight of 1 Pumpkin: 3 lbs

Write down the weights of watermelon, grapefruit and pumpkin in the table:

Fruit	Weight (in pounds)
Watermelon	4 lbs
Grapefruit	1 lbs
Pumpkin	3 lbs

Use the table when working on the problems below

4. Joe puts 8 grapefruits on one side of the scale. How many watermelons must he put on the other side of the scale to balance the weight of the grapefruits?

Solution: 2 watermelons

5. Alice puts 3 pumpkins on one side of the scale. There is a 5 pound weight on the other side of the scale.

a. Is the scale balanced? Why or why not?

Solution: No, 2 pumpkins = 9 lbs which is more than 5 lbs.

b. Which side is heavier?

Solution: The side with the pumpkins.

c. Can Alice put several grapefruits on the lighter side so that the scale is in balance? How many grapefruits should she put?

Solution: Yes, she needs 4 grapefruits.

7. The weight of a melon equals to the weight of half a melon plus 2 pounds. How much does a melon weigh?

Solution: 4 lbs

8. Suppose you have 3 coins. One of them is fake and is lighter than the other two. Use the balance scale to find the fake coin. How many trials do you need to use? Can you find the fake coin with just one trial?

Solution: 1 trial

Homework Solutions:

1. Lisa puts 5 grapefruit on one side of the scale. There is a 2 pound weight on the other side of the scale.

a. Is the scale balanced? Why or why not?

Solution: No, 5 grapefruits=5lbs which is more than 2 lbs

b. Can Lisa add a watermelon or a pumpkin to one of the sides to balance the scale ?

Solution: Yes, add a pumpkin to the side with the weight.

CHALLENGE PROBLEM:

8. The weight of one papaya equals to the weight of a third of a papaya plus 2 pounds. How much does a papaya weigh?

Solution: 3 lbs