1. The diagram shows the scales balanced.

How many boxes on the right side will balance each of the following sets of scales?

a)

b)

2. By what number can you divide to solve for each variable?

a) $2m = 12$ **b)** $5b = 10$ **c)** $3d = 9$

3. Solve each of these equations.

a) $3x = 21$ **b)** $8y = 24$
c) $5s = 25$ **d)** $7w = 56$
e) $10t = 60$ **f)** $11p = 44$

4. Solve and check these equations.

a) $12a = 24$ **b)** $6q = 6$
c) $15c = 45$ **d)** $13f = 52$
e) $9r = 1.8$ **f)** $4b = 1.6$

5. Solve these equations.

a) $\dfrac{x}{2} = 3$ **b)** $\dfrac{y}{3} = 1$

c) $\dfrac{f}{7} = 2$ **d)** $\dfrac{r}{4} = 5$

6. Half a cylinder balances four boxes.

a) Describe how you would isolate c in the equation:

$$\frac{c}{2} = 4$$

b) Describe what the solution to this equation tells you.

7. Solve and check these equations.

a) $\dfrac{z}{5} = 6$ **b)** $\dfrac{w}{8} = 7$

c) $\dfrac{h}{6} = 1.2$ **d)** $\dfrac{j}{9} = 2.5$

8. Solve for each variable.

a) $5a = 35$ **b)** $\dfrac{b}{6} = 5$

c) $7c = 49$ **d)** $\dfrac{d}{5} = 1.2$

e) $12e = 24$ **f)** $9f = 81$

g) $\dfrac{i}{2} = 4$ **h)** $\dfrac{k}{15} = 3$

9. Solve, then check your solution.

a) $6a = 60$ **b)** $\dfrac{b}{4} = 19$

c) $6c = 24$ **d)** $\dfrac{d}{9} = 18$

e) $150e = 1500$ **f)** $\dfrac{f}{15} = 20$

10. Solve and check.

a) $33g = 165$ **b)** $\dfrac{h}{8} = 16$

c) $5i = 20$ **d)** $3j = 45$

e) $10k = 100$ **f)** $\dfrac{m}{10} = 100$

11. Write an equation to describe each balance.

a)

b)

12. What is the mass of one book and one pineapple in Problem 11. Discuss your method with a classmate.