Lesson 2-3: Understand Proportional Relationships - Equivalent Ratios

1. All related pairs of proportional quantities *x* and *y* have the same relationship. So, you can write equivalent ratios for all related pairs of *x* and *y*.

2. The rations $\frac{y}{x}$ for all pairs of x and y will not be equivalent.

3. It means that x and y have a proportional relationship.

4. $\frac{5}{2} = \frac{7.5}{3} = \frac{12.5}{5} = 2.5$, but $\frac{18}{8} = 2.25$, so x and y do not have a proportional relationship.

5. Yes; the quantities are proportional because the ratios $\frac{3}{1}$, $\frac{6}{2}$, and $\frac{9}{3}$ are equivalent.

6. Yes; 640 tickets.

7. $\frac{25}{1}$; $\frac{25}{1}$

8. No; the ratios of Calories to slices of salami are not all equivalent.

9. Yes; the ratios of cost to dozens of eggs for all related pairs are equivalent.

10. No; the quantities x and y do not have a proportional relationship, so you cannot find the value of y when x is 11.

11. Yes; y = $3\frac{1}{3}$

12. a. $\frac{135\,feet}{9\,floors}$; $\frac{15\,feet}{1\,floor}$; Each floor of the building is 15 feet high.

13. Yes; Sample answer: All the ratios of y to x are equivalent. Every ratio $\frac{y}{x}$ is equivalent to $\frac{9}{4}$.

14. a. Yes; the ratios of towers to customers are all equivalent.
    b. $\frac{5,250}{252} = \frac{y}{576}$; y = 12,000 customers

15. A, D, E