

Chapter 2

Quiz 2.5-2.7

1. Each figure is a rectangle. So, corresponding angles have the same measure.

$$\text{Ratio of corresponding widths: } \frac{4}{10} = \frac{2}{5}$$

$$\text{Ratio of corresponding lengths: } \frac{8}{20} = \frac{2}{5}$$

The ratios are equivalent, so the side lengths are proportional. The rectangles are similar.

$$2. \frac{x}{3} = \frac{22}{4}$$

$$\frac{x}{3} = \frac{11}{2}$$

$$x = \frac{33}{2}$$

$$\text{So, } x = \frac{33}{2}, \text{ or } 16\frac{1}{2}.$$

$$3. \frac{6}{14} = \frac{8}{x}$$

$$\frac{3}{7} = \frac{8}{x}$$

$$3x = 56$$

$$x = \frac{56}{3}$$

$$\text{So, } x = \frac{56}{3}, \text{ or } 18\frac{2}{3}.$$

$$4. \frac{\text{Perimeter of red figure}}{\text{Perimeter of blue figure}} = \frac{12}{8} = \frac{3}{2}$$

$$\frac{\text{Area of red figure}}{\text{Area of blue figure}} = \left(\frac{12}{8}\right)^2 = \left(\frac{3}{2}\right)^2 = \frac{9}{4}$$

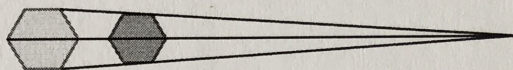
The ratio of the perimeters is $\frac{3}{2}$ and the ratio of the areas is $\frac{9}{4}$.

$$5. \frac{\text{Perimeter of red figure}}{\text{Perimeter of blue figure}} = \frac{4}{15}$$

$$\frac{\text{Area of red figure}}{\text{Area of blue figure}} = \left(\frac{4}{15}\right)^2 = \frac{16}{225}$$

The ratio of the perimeters is $\frac{4}{15}$ and the ratio of the areas is $\frac{16}{225}$.

6. yes;



Lines connecting corresponding vertices meet at a point. So, the blue figure is a dilation of the red figure.

7. no; The figures have the same size and shape. The red figure slides to form the blue figure. So, the blue figure is not a dilation of the red figure. It is a translation.

$$8. \frac{\text{Area of TV screen}}{\text{Area of computer screen}} = \left(\frac{20}{12}\right)^2$$

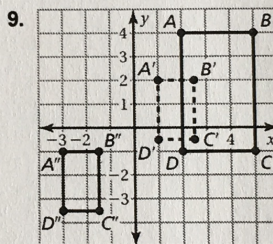
$$\frac{A}{108} = \left(\frac{5}{3}\right)^2$$

$$\frac{A}{108} = \frac{25}{9}$$

$$A = \frac{25 \times \cancel{108}^{12}}{\cancel{9}_1}$$

$$A = 300$$

The area of the TV screen is 300 square inches.



The coordinates of the image are $A'(-3, -1)$,

$B'\left(-1\frac{1}{2}, -1\right)$, $C'\left(-1\frac{1}{2}, -3\frac{1}{2}\right)$, and $D'\left(-3, -3\frac{1}{2}\right)$.

$$10. \frac{\text{Width of singles court}}{\text{Width of doubles court}} = \frac{27}{36} = \frac{3}{4}$$

$$\frac{\text{Length of singles court}}{\text{Length of doubles court}} = \frac{78}{78} = 1$$

The ratios are not equivalent, so the side lengths are not proportional. The courts are not similar.

Chapter 2 Review

- Side QR corresponds to Side EF . So, the length of Side QR is 3 feet.
- The perimeter of $EFGH$ is $8 + 3 + 5 + 4 = 20$ feet. Because the trapezoids are congruent, their corresponding sides are congruent. So, the perimeter of $QRST$ is also 20 feet.