

Complete the proportion.

1. If $\frac{3}{x} = \frac{5}{y}$, then $\frac{x}{y} = \frac{3}{5}$

Interchange means

3. If $\frac{a}{y} = \frac{4}{21}$, then $\frac{a+7}{7} = \frac{4+21}{21} = \frac{25}{21}$

Add one

2. If $x:4=3:7$, then $7x = 12$

Extremus Means Property

4. If $\frac{3}{4} = \frac{x}{y}$, then $\frac{7}{4} = \frac{x+y}{y}$

Add one

Find the measure of each angle.

5. Two supplementary angles have measure in the ratio 3:7.

$$3x + 7x = 180$$

$$10x = 180$$

$$x = 18$$

$$3x = 54$$

$$7x = 126$$

6. Two complementary angles have measure in the ratio 2:7.

$$2x + 7x = 90$$

$$9x = 90$$

$$x = 10$$

$$2x = 20^\circ$$

$$7x = 70^\circ$$

Find the value of x.

7. $\frac{x}{5} = \frac{2}{15}$

$$15x = 10$$

$$x = \frac{10}{15}$$

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

8. $\frac{14}{x} = \frac{10}{5}$

$$70 = 10x$$

$$7 = x$$

9. $\frac{3}{4} = \frac{6}{x-5}$

$$3x - 15 = 24$$

$$3x = 39$$

$$x = 13$$

10. $\frac{x-5}{2} = \frac{5}{6}$

$$6x - 30 = 10$$

$$6x = 40$$

$$x = \frac{40}{6}$$

$$x = \frac{20}{3}$$

Find the value of x .

$$11. \frac{x-2}{x+1} = \frac{1}{4}$$

$$4x - 8 = x + 1$$

$$3x = 9$$

$$x = 3$$

$$12. \frac{x+5}{2} = \frac{2}{x+2}$$

$$x^2 + 7x + 10 = 4$$

$$x^2 + 7x + 6 = 0$$

$$(x+3)(x+2) = 0$$

$$x = -3 \quad x = -2$$

$$13. \frac{3}{x-8} = \frac{x+3}{-10}$$

$$-30 = x^2 - 5x - 24$$

$$0 = x^2 - 5x + 6$$

$$0 = (x-3)(x-2)$$

$$x = 3 \quad x = 2$$

$$14. \frac{1}{x-6} = \frac{x-10}{-4}$$

$$-4 = x^2 - 16x + 60$$

$$0 = x^2 - 16x + 64$$

$$0 = (x-8)(x-8)$$

$$x = 8 \quad x = 8$$