

Section 3.6

Focus Exercise Answers

1. Legend: Let x = Mr. Daniels votes
 $x - 16$ = Mrs. Jenkins votes

Diagram:

Formula: Sum of the parts = whole

Equation: $x + x - 16 = 180$

$$x = 68$$

Calculate Mrs. Jenkins votes: $x - 16 = 68 - 16 = 52$

Answer: Mr. Daniels received 68 votes and Mrs. Jenkins received 52 votes.

3. Legend: Let x = shorter piece
 $3x$ = bigger piece

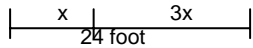


Diagram:

Formula: Sum of the parts = whole

Equation: $x + 3x = 24$

$$x = 6$$

Calculate the bigger piece: $3x = 3(6) = 18$

Answer: The shorter piece is 6 feet and the bigger piece is 18 feet.

5. Legend: Let x = amount Eli earned
 $x + 500$ = amount Chandra earned

Diagram:

Formula: Sum of the parts = whole

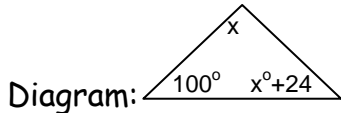
Equation: $x + x + 500 = 2200$

$$x = 850$$

Calculate amount Chandra earned: $x + 500 = 850 + 500 = 1350$

Answer: Eli earned \$850 and Chandra earned \$1350.

7. Legend: Let x = measure of the small angle
 $x + 24$ = measure of the middle angle



Formula: $A + B + C = 180$

Equation: $100 + x + x + 24 = 180$

$x = 28$

Calculate the middle angle: $x + 24 = 28 + 24 = 52$

Answer: The small angle is 28° and the middle angle is 52° .

9. Legend: Let x = 2nd test
 $x + 8$ = 1st test

Diagram:

Formula: Sum of the parts = whole

Equation: $x + x + 8 = 170$

$x = 81$

Calculate the 1st test score: $x + 8 = 81 + 8 = 89$

Answer: The score on 1st test is 89 points and score on the second test is 81.

11. Legend: Let x = length of two sides of the triangle
 12 in = 3rd side of the triangle

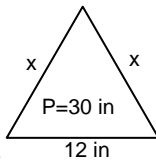


Diagram:

Formula: Sum of all sides = Perimeter

Equation: $x + x + 12 = 30$

$x = 9$

Answer: The length of the side is 9 inches.

13. Legend: Let x = width
 $x + 12$ = length

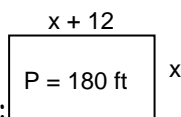


Diagram:

Formula: Perimeter = $2L + 2W$

Equation: $180 = 2(x + 12) + 2x$

$x = 39$

Calculate the length: $x + 12 = 39 + 12 = 51$

Answer: The length is 51 feet and width is 39 feet.

15. Legend: Let x = small watermelon
 $2x-5$ = large watermelon

Diagram:

Formula: Sum of the parts = whole

Equation: $x + 2x - 5 = 34$

$$x = 13$$

Calculate the weight of the large watermelon: $2x - 5 = 2(13) - 5 = 21$

Answer: The weight of the small watermelon was 13 lbs and the large watermelon was 21 lbs.

17. Legend: Let x = miles Shufen drove
 $2x + 155$ = miles Zhe drove

Diagram:

Formula: Sum of the parts = whole

Equation: $x + 2x + 155 = 1472$

$$x = 439$$

Calculate the miles Zhe drove: $2x + 155 = 2(439) + 155 = 1033$

Answer: Shufen drove 439 miles and Zhe drove 1033 miles.

19. Legend: Let x = votes for Marisa
 $3x - 16$ = votes for Shandrell

Diagram:

Formula: Sum of the parts = whole

Equation: $x + 3x - 16 = 1308$

$$x = 331$$

Calculate the number of votes Shandrell got: $3x - 16 = 3(331) - 16 = 977$

Answer: Marisa received 331 votes and Shandrell received 977 votes.