Answer Key · Lesson 4.6: Isosceles and Equilateral Triangles

School Launch · Geometry · Unit 4 · Worksheet A · for the parent

Key

1. 38°

The vertex angle of an isosceles triangle is 104°. Find each base angle.

2. 78°

The vertex angle of an isosceles triangle is 24°. Find each base angle.

3. 14°

The vertex angle of an isosceles triangle is 152°. Find each base angle.

4. $x = 6$; legs 28; base 4

1. Legs are equal: $5x - 2 = 6x - 8 \Rightarrow x = 6$
2. Each leg: 28
3. Base $= 60 - 2(28) = 4$

In isosceles $\triangle PQR$, the legs measure $5x - 2$ and $6x - 8$, and the perimeter is 60. Find x, the legs and the base.

5. $x = 9$; legs 46; base 4

1. Legs are equal: $5x + 1 = x + 37 \Rightarrow x = 9$
2. Each leg: 46
3. Base $= 96 - 2(46) = 4$

In isosceles $\triangle PQR$, the legs measure $5x + 1$ and $x + 37$, and the perimeter is 96. Find x, the legs and the base.

6. $x = 7$; legs 31; base 4

1. Legs are equal: $4x + 3 = 5x - 4 \Rightarrow x = 7$
2. Each leg: 31
3. Base $= 66 - 2(31) = 4$

In isosceles $\triangle PQR$, the legs measure $4x + 3$ and $5x - 4$, and the perimeter is 66. Find x, the legs and the base.

7. $x = 8$; legs 38; base 15

1. Legs are equal: $5x - 2 = 4x + 6 \Rightarrow x = 8$
2. Each leg: 38
3. Base $= 91 - 2(38) = 15$

In isosceles $\triangle PQR$, the legs measure $5x - 2$ and $4x + 6$, and the perimeter is 91. Find x, the legs and the base.

8. $x = 8$; legs 21; base 10

1. Legs are equal: $2x + 5 = 6x - 27 \Rightarrow x = 8$
2. Each leg: 21
3. Base $= 52 - 2(21) = 10$

In isosceles $\triangle PQR$, the legs measure $2x + 5$ and $6x - 27$, and the perimeter is 52. Find x, the legs and the base.

9. $x = 4$; legs 17; base 19

1. Legs are equal: $5x - 3x + 5 \Rightarrow x = 4$
2. Each leg: 17
3. Base $= 53 - 2(17) = 19$

In isosceles $\triangle PQR$, the legs measure $5x - 3$ and $3x + 5$, and the perimeter is 53. Find x, the legs and the base.

10. $x = 10$; legs 51; base 10

1. Legs are equal: $5x + 1 = 3x + 21 \Rightarrow x = 10$
2. Each leg: 51
3. Base $= 112 - 2(51) = 10$

In isosceles $\triangle PQR$, the legs measure $5x + 1$ and $3x + 21$, and the perimeter is 112. Find x, the legs and the base.