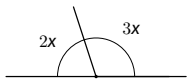


Angles on a Straight Line — Answers



1. Two angles on a line are in the ratio 2 : 3. Find both angles.

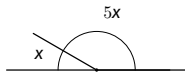


Solution

$$5x = 180^\circ$$

$$x = 36^\circ: 72^\circ, 108^\circ$$

2. Two angles on a line are in the ratio 1 : 5. Find both angles.

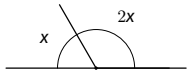


Solution

$$6x = 180^\circ$$

$$x = 30^\circ: 30^\circ, 150^\circ$$

3. One angle on a line is twice the other. Find both angles.

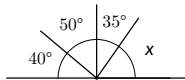


Solution

$$3x = 180^\circ$$

$$x = 60^\circ: 60^\circ, 120^\circ$$

4. Four angles on a line are 40° , 50° , 35° , and x . Find x .



Solution

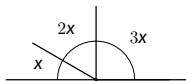
$$x = 180^\circ - 125^\circ$$

$$x = 55^\circ$$

Angles on a Straight Line — Answers



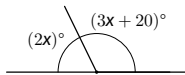
5. Three angles on a line are in the ratio 1 : 2 : 3. Find the largest angle.



Solution

$$6x = 180^\circ, x = 30^\circ$$
$$\text{largest} = 90^\circ$$

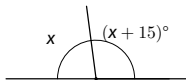
6. Two angles on a line are $(2x)^\circ$ and $(3x + 20)^\circ$. Find x .



Solution

$$5x + 20 = 180^\circ$$
$$x = 32^\circ$$

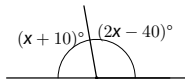
7. An angle on a line is 15° more than another. Find both angles.



Solution

$$2x + 15 = 180^\circ$$
$$x = 82.5^\circ:$$
$$82.5^\circ, 97.5^\circ$$

8. Two angles on a line are $(x + 10)^\circ$ and $(2x - 40)^\circ$. Find x .



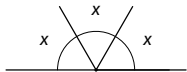
Solution

$$3x - 30 = 180^\circ$$
$$x = 70^\circ$$

Straight Line & Around a Point — Answers



- 9.** Three angles on a line are equal. Find each angle.

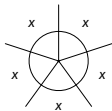


Solution

$$3x = 180^\circ$$

$$x = 60^\circ$$

- 10.** Five angles around a point are all equal. Find each angle.

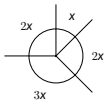


Solution

$$5x = 360^\circ$$

$$x = 72^\circ$$

- 11.** Angles around a point are in the ratio 1 : 2 : 3 : 2. Find the largest angle.

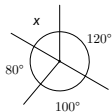


Solution

$$8k = 360^\circ, \quad k = 45^\circ$$

$$\text{largest} = 3k = 135^\circ$$

- 12.** Angles around a point are 120° , 100° , 80° , and x . Find x .



Solution

$$x = 360^\circ - 300^\circ$$

$$x = 60^\circ$$

Angles Around a Point — Answers

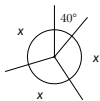


13. Two angles around a point are $(x + 20)^\circ$ and $(2x + 10)^\circ$. The other two are equal. Find all angles.

Solution

Given pair make 180° : $x = 50^\circ$
 $70^\circ, 110^\circ, 70^\circ, 110^\circ$

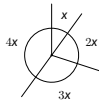
15. An angle around a point is 40° . The remaining three are equal. Find each of the three.



Solution

$$40^\circ + 3x = 360^\circ$$
$$x = 106\frac{2}{3}^\circ$$

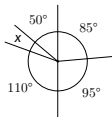
14. Four angles around a point are in the ratio $1 : 2 : 3 : 4$. Find each angle.



Solution

$$10k = 360^\circ, k = 36^\circ$$
$$36^\circ, 72^\circ, 108^\circ, 144^\circ$$

16. Angles around a point are 85° , 95° , 110° , x , and 50° . Find x .



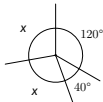
Solution

$$x = 360^\circ - 340^\circ$$
$$x = 20^\circ$$

Around a Point & Triangles – Answers



17. One angle around a point is 120° . Another is 40° . The remaining two are equal. Find each.

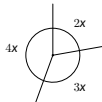


Solution

$$2x = 360^\circ - 160^\circ$$

$$x = 100^\circ$$

18. Three angles around a point are in the ratio $2 : 3 : 4$. Find each angle.

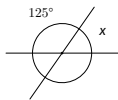


Solution

$$9k = 360^\circ, k = 40^\circ$$

$$80^\circ, 120^\circ, 160^\circ$$

19. Two straight lines cross forming angle x . An adjacent angle is 125° . Find x .

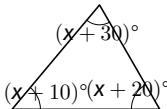


Solution

$$x + 125^\circ = 180^\circ$$

$$x = 55^\circ$$

20. A triangle has angles $(x + 10)^\circ$, $(x + 20)^\circ$, and $(x + 30)^\circ$. Find x .



Solution

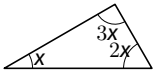
$$3x + 60 = 180^\circ$$

$$x = 40^\circ$$

Angles in a Triangle – Answers



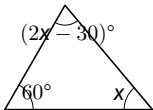
21. A triangle's angles are in the ratio 1 : 2 : 3. Find the largest angle.



Solution

$$6k = 180^\circ, k = 30^\circ$$
$$\text{largest} = 90^\circ$$

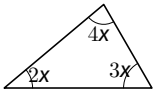
22. A triangle has angles 60° , x , and $(2x - 30)^\circ$. Find x .



Solution

$$3x + 30 = 180^\circ$$
$$x = 50^\circ$$

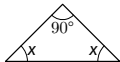
23. A triangle's angles are in the ratio 2 : 3 : 4. Find the smallest angle.



Solution

$$9k = 180^\circ, k = 20^\circ$$
$$\text{smallest} = 40^\circ$$

24. One angle in a triangle is 90° . The other two are equal. Find them.

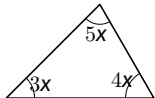


Solution

$$90^\circ + 2x = 180^\circ$$
$$x = 45^\circ \text{ each}$$

Triangles & Vertically Opposite — Answers

25. A triangle has angles in the ratio 3 : 4 : 5. Find each angle.



Solution

$$12k = 180^\circ, k = 15^\circ$$

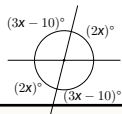
$$45^\circ, 60^\circ, 75^\circ$$

26. An exterior angle of a triangle is 140° . One remote interior angle is 55° . Find the other remote interior angle.

Solution

$$x = 140^\circ - 55^\circ = 85^\circ$$

27. Two lines cross. The four angles are $(2x)^\circ$, $(3x - 10)^\circ$, $(2x)^\circ$, and $(3x - 10)^\circ$. Find x .



Solution

$$2x + (3x - 10) = 180^\circ$$

$$x = 38^\circ$$