

Angle Pair Relationships (part 1)

Complementary angles—two angles whose measures add up to 90°

Supplementary angles—two angles whose measures add up to 180°

Adjacent angles—two angles that share a common vertex and side, but no common interior points

Complementary angles

Adjacent Nonadjacent

Supplementary angles

Adjacent Nonadjacent

title

complementary and supplementary angles

Angle A and angle B are complementary. $m\angle A + m\angle B = 90$
 Angle B and angle C are supplementary. $m\angle B + m\angle C = 180$

The measure of angle B is 38° . Find the measure of angle A and angle C.

$$\begin{array}{r} m\angle A + 38 = 90 \\ -38 \quad -38 \\ \hline m\angle A = 52^\circ \end{array} \qquad \begin{array}{r} m\angle C + 38 = 180 \\ -38 \quad -38 \\ \hline m\angle C = 142^\circ \end{array}$$

The measure of angle C is 104° . Find the measure of angle B and angle A.

$$\begin{array}{r} B + 104 = 180 \\ -104 \quad -104 \\ \hline m\angle B = 76^\circ \end{array} \qquad \begin{array}{r} 76 + A = 90 \\ -76 \quad -76 \\ \hline m\angle A = 14^\circ \end{array}$$

examples


Find $m\angle ABC$ and $m\angle CBD$.

$$\begin{aligned} 2x + 3x - 10 &= 90 & m\angle ABC &= 40^\circ \\ 5x - 10 &= 90 & m\angle CBD &= 50^\circ \\ 5x &= 100 \\ x &= 20 \end{aligned}$$

$$\begin{aligned} 8x + 9 + 6x + 17 &= 180 & m\angle ABC &= 90^\circ \\ 14x + 26 &= 180 & m\angle CBD &= 83^\circ \\ 14x &= 154 \\ x &= 11 \end{aligned}$$

examples

The measure of one angle is eight times the measure of its complement. Find the measure of each angle.

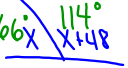


$$x + 8x = 90$$

$$9x = 90$$

$$x = 10$$

The measure of one angle is 48° more than the measure of its supplement. Find the measure of each angle.



$$2x + 48 = 180$$

$$2x = 132$$

$$x = 66$$

Conclusion

1. What does adjacent mean? *2 ∠s that share a vertex + common side.*
2. What is supplementary angles? *2 ∠s add to 180°*
3. What is complementary angles? *2 ∠s add to be 90°*
4. Rate 1 to 10 (10 being the Best), how would you rate your knowledge of the concepts we have learned in this class?

examples

Sep 9-8:51 AM

Assignment

Angle Relationships Wkst #1

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