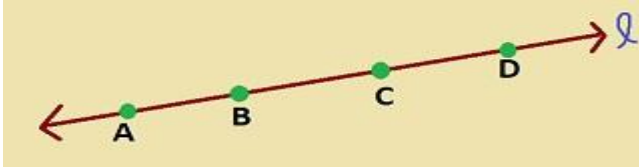
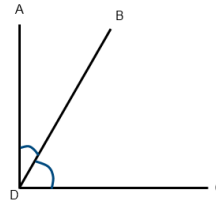


1. Points A, B, C, and D lie on \overline{AD} . If $AB = 3$ meters, $BC = 5$ meters, and $CD = 4$ meters, what is AD ? Show your methods below.



2. If $m\angle ADB = 20^\circ$ and $m\angle ADC = 85^\circ$, what is $m\angle BDC$? Show your methods.



3. If C is between A and B, then the *Segment Addition Postulate* states that:

_____ + _____ = _____

4. If C is in the interior of between $\angle ADB$, then the *Angle Addition Postulate* states that:

_____ + _____ = _____

5.

A right angle has _____ degrees.

6.

A straight angle has _____ degrees.

7. Use two of the words below to make each statement true.

A _____ is a statement that is believed to be true and accepted without proof.

A _____ is a statement that has been proven to be true for all cases.

postulate

theorem

axiom

converse

8. What are *linear pair* angles?

9. What is the *linear pair theorem*?

10. $\angle ADB$ and $\angle BDC$ are linear pairs. If $m\angle ADB = 80^\circ$, then find $m\angle BDC$. Explain how you got your answer.

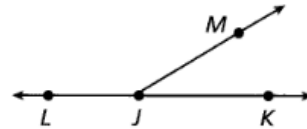
11. What is the **common segment theorem**?

12.

If two angles form a linear pair, then they are supplementary.

Given: $\angle MJK$ and $\angle MJL$ are a linear pair of angles.

Prove: $\angle MJK$ and $\angle MJL$ are supplementary.



Complete the proof by writing the missing reasons. Choose from the following reasons.

Angle Addition Postulate

Definition of opposite rays

Substitution Property of Equality

Given

Statements	Reasons
1. $\angle MJK$ and $\angle MJL$ are a linear pair.	1.
2. \vec{JL} and \vec{JK} are opposite rays.	2. Definition of linear pair
3. \vec{JL} and \vec{JK} form a straight line.	3.
4. $m\angle LJK = 180^\circ$	4. Definition of straight angle
5. $m\angle MJK + m\angle MJL = m\angle LJK$	5.
6. $m\angle MJK + m\angle MJL = 180^\circ$	6.
7. $\angle MJK$ and $\angle MJL$ are supplementary.	7. Definition of supplementary angles

13.

If A , B , C , and D are collinear, as shown in the figure, with $AC = BD$, then $AB = CD$.



Given: $AC = BD$

Prove: $AB = CD$

Statements	Reasons
1. $AC = BD$	1.
2. $AC = AB + BC$; $BD = BC + CD$	2.
3.	3. Substitution Property of Equality
4. $AB = CD$	4.