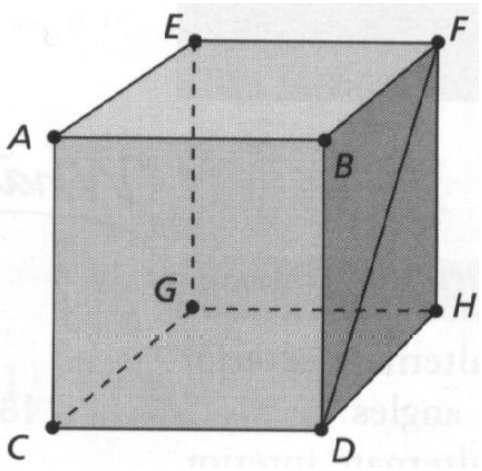
Name: Key

Chapter 3 Review

Use the cube at the right to identify the figure.



1. Identify two segments parallel to $\overline{DH}$

   $\overline{BF}$, $\overline{AE}$ or $\overline{CG}$

2. Identify two segments perpendicular to $\overline{FD}$

   $\overline{CD}$ and $\overline{EF}$

3. Identify two segments skew to $\overline{AE}$

   $\overline{CD}$, $\overline{GH}$, $\overline{FH}$, $\overline{BD}$ or $\overline{FD}$

4. Identify two segments oblique to $\overline{FD}$

   $\overline{FB}$, $\overline{FH}$, $\overline{DH}$ or $\overline{BD}$

5. Identify a plane that is perpendicular to $\overline{EF}$

   AEGC or BFHD

6. Identify two planes that are parallel

AEGC and BFHD; ABDC and EFHG; AEFB and CGHD

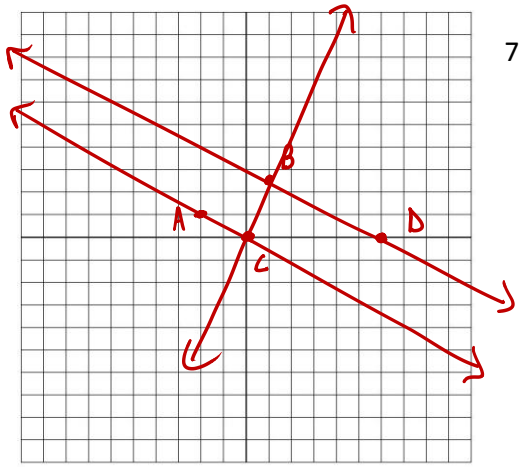
Use the coordinates to answer the following questions.

A (-2, 1)

B (1, 2.5)

C (0, 0)

D (6, 0)



7. Prove or Disprove that $\overleftrightarrow{AC} \parallel \overleftrightarrow{BD}$

   Slope $\overleftrightarrow{AC} = -\frac{1}{2}$

   Slope $\overleftrightarrow{BD} = -\frac{1}{2}$

   $\overleftrightarrow{AC} \parallel \overleftrightarrow{BD}$ since their slopes are equal

8. Prove or Disprove that $\overleftrightarrow{CB} \perp \overleftrightarrow{BD}$

   Slope $\overleftrightarrow{CB} = \frac{5}{2}$

   Slope $\overleftrightarrow{BD} = -\frac{1}{2}$

   $\overleftrightarrow{CB} \not\perp \overleftrightarrow{BD}$ since their slopes are not opposite reciprocals.

   $\overleftrightarrow{CD}$ & $\overleftrightarrow{BD}$ are oblique

9. Write the equation of the line that passes through the following points: (-5, 4) and (8, $-\frac{55}{9}$)

$y = -\frac{7}{9}x + \frac{1}{9}$

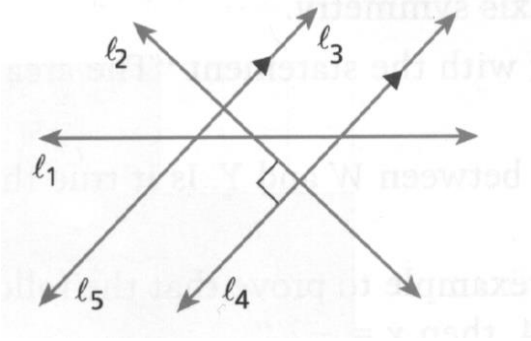
10. Write the equation of the line that is perpendicular to y = -2x + 4 and that passes through the point (-1, 2).

$y = \frac{1}{2}x + \frac{5}{2}$

Use the figure to match each pair of lines with a word (match each word exactly once).

11. ℓ_1 and ℓ_2 a
12. ℓ_3 and ℓ_4 c
13. ℓ_2 and ℓ_3 b
14. ℓ_3 and ℓ_5 d

a. Oblique
b. Perpendicular
c. Parallel
d. Coincident



Classify the angles in the diagram at the right.

15. ∠1 and ∠2

Alternate Interior ∡s

16. ∠1 and ∠4

Linear Pair, Adjacent, Supplementary

17. ∠2 and ∠3

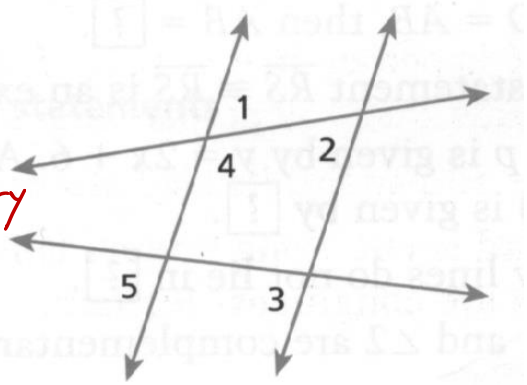
Corresponding ∡s

18. ∠1 and ∠5

Alternate Exterior ∡s

19. ∠2 and ∠4

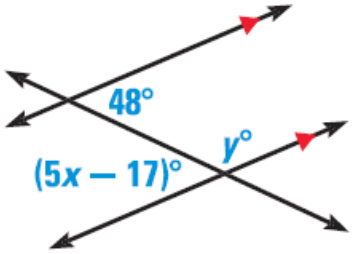
Consecutive Interior ∡s



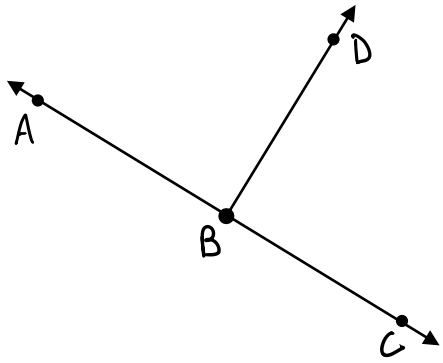
20. Find the values of x and y.

$x = 13°$

$y = 132°$



21.



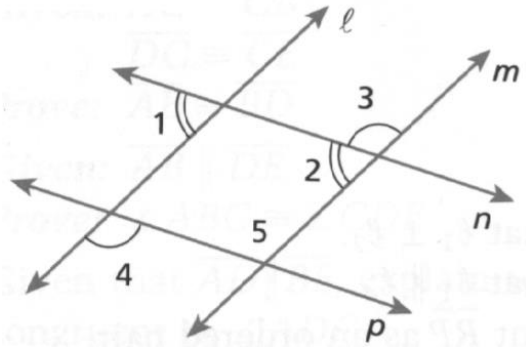
Given: $\overrightarrow{BD} \perp \overleftrightarrow{AC}$

$\measuredangle ABC$ is a straight angle

Prove: $\measuredangle ABD \cong \measuredangle DBC$

	Statement	Reason
1	$\overrightarrow{BD} \perp \overleftrightarrow{AC}$	Given
2	$\measuredangle ABD$ is a right $\measuredangle$	Def. of $\perp$ Lines
3	$m\measuredangle ABD = 90°$	Def. of right $\measuredangle$s
4	$\measuredangle DBC$ is a right $\measuredangle$	Def. of $\perp$ Lines
5	$m\measuredangle DBC = 90°$	Def. of right $\measuredangle$s
6	$m\measuredangle ABD = m\measuredangle DBC$	Substitution (5 into 3) or Transitive
7	$\measuredangle ABD \cong \measuredangle DBC$	Def. of $\cong$

22.



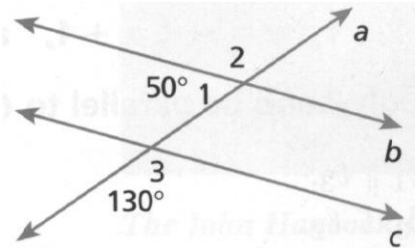
Given: $\angle 1 \cong \angle 2$

$\angle 3 \cong \angle 4$

Prove: $n \parallel p$

	Statement	Reason
1	$\measuredangle 1 \cong \measuredangle 2$	Given
2	$\ell \parallel m$	Corresponding $\measuredangle$s Converse
3	$\measuredangle 4 \cong \measuredangle 5$	Alternate Interior $\measuredangle$s Theorem
4	$\measuredangle 3 \cong \measuredangle 4$	Given
5	$\measuredangle 3 \cong \measuredangle 5$	Substitution (3 into 4) or Transitive
6	$n \parallel p$	Corresponding $\measuredangle$s Converse

23.



Given: $m\angle 1 = 50°$

$m\angle 3 = 130°$

$\angle 1$ and $\angle 2$ are a linear pair

Prove: $b \parallel c$

	Statement	Reason
1	$m\measuredangle 1 = 50°$	Given
2	$\measuredangle 1$ & $\measuredangle 2$ are a Linear Pair	Given
3	$\measuredangle 1$ & $\measuredangle 2$ are supplementary	Linear Pair Postulate
4	$m\measuredangle 1 + m\measuredangle 2 = 180°$	Def. of Supplementary $\measuredangle$s
5	$50° + m\measuredangle 2 = 180°$	Substitution (1 into 4)
6	$m\measuredangle 2 = 130°$	Subtraction
7	$m\measuredangle 3 = 130°$	Given
8	$m\measuredangle 2 = m\measuredangle 3$	Substitution (7 into 6) or transitive
9	$\measuredangle 2 \cong \measuredangle 3$	Def. of $\cong$
10	$b \parallel c$	Alt. Exterior $\measuredangle$s Converse