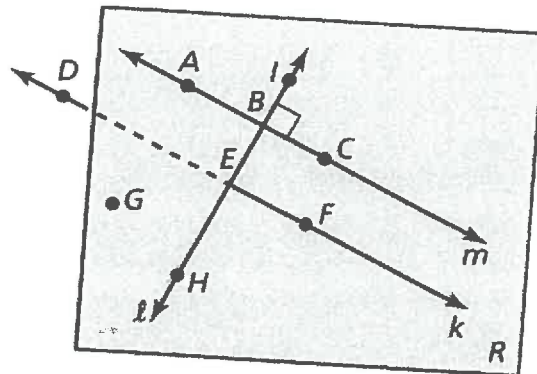


Chapter 2

Final Review

#1-6: Use the diagram to determine whether the statement is true or false.

- Points D , G , and F are collinear. **False**
- $\angle ABH$ is a right angle. **True**
- $\angle ABH$ and $\angle CBH$ are complementary. **False**
- \overleftrightarrow{IH} is perpendicular to line m . **True**
- $\angle DEH$ and $\angle FEH$ are supplementary. **True**
- \overleftrightarrow{CB} is perpendicular to line ℓ . **True**



#7-8: Determine whether the conditional statement is true. If false, give a counterexample.

- If two planes intersect, then they intersect in exactly one point.

False, when two planes intersect, the intersect is a line.

- If two lines intersect, then they form four angles.

True

#9-12: Write each statement in words. Then decide whether it is true or false.

Let p be "it is Sunday" and let q be "it is the weekend."

- the conditional statement

$p \rightarrow q$ **If it is Sunday, Then it is the weekend. True**

- the converse

$q \rightarrow p$ **If it is the weekend, then it is Sunday. False**

- the inverse

$\sim p \rightarrow \sim q$ **If it is not Sunday, then it is not the weekend. False**

- the contrapositive

$\sim q \rightarrow \sim p$ **If it is not the weekend, then it is not Sunday. True**

Solve the equation. Justify each step.

$$13. \frac{x+3}{-2} = 8$$

$$x+3 = -16 \quad \text{Multiplication Prop of Equality}$$

$$x = -19 \quad \text{Subtraction Prop of Equality}$$

$$14. 5x - 3 = 4(x - 2)$$

$$5x - 3 = 4x - 8 \quad \text{Distributive Prop}$$

$$x - 3 = -8$$

$$x = -5 \quad \text{Addition Prop of =}$$

15. You and your brother borrowed money to buy a car from a local bank at an annual simple interest rate of 5%. The amount of interest I is represented by the equation $I = Prt$ where P is the principal amount, r is the rate (in decimal form), and t is the time (in years). Solve the formula for P , then find the principal amount when the interest is \$7500 and the time is 6 years. Be sure to justify each step.

$$I = Prt \quad \text{Given}$$

$$\frac{I}{rt} = P \quad \text{Division Prop of =}$$

$$P = \frac{7500}{.05(6)} = \$25000$$

Identify the property that justifies the statement.

16. $KL = PR$, so $PR = KL$ **Symmetric**

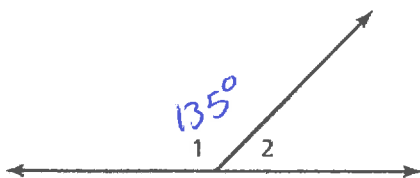
17. $614 = 614$ **Reflexive**

18. If $a = b$ and $b = c$, then $a = c$. **Transitive**

Write a proof using any format.

19. Given $\angle 1$ and $\angle 2$ are supplementary, $m\angle 1 = 135^\circ$

Prove $m\angle 2 = 45^\circ$



Statement	Reason
1. $\angle 1$ and $\angle 2$ are supp. $m\angle 1 = 135^\circ$	1. Given
2. $m\angle 1 + m\angle 2 = 180$	2. Def of Supplement-ary
3. $135^\circ + m\angle 2 = 180$	3. Substitution
4. $m\angle 2 = 45^\circ$	4. Subtraction Prop of =