LESSON Practice A			
2-2 Conditional Statements	2-2 Conditional Statements		
Match the correct term to complete each sentence.	Identify the hypothesis and conclusion of each conditional.		
1. A conditional statement is a statement that can be written A. hypothesis	1. If you can see the stars, then it is night. 2. A pencil writes well if it is sharp.		
in the form " $\begin{array}{c} D \\ p, \\ \end{array}$, $\begin{array}{c} D \\ q, \\ \end{array}$, $\begin{array}{c} q, \\ q, \\ \end{array}$, $\begin{array}{c} B \\ p, \\ \end{array}$, $\begin{array}{c} c \\ q, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \\ p, \\ \end{array}$, $\begin{array}{c} c \\ p, \end{array}$, \ $\begin{array}{c}$	Hypothesis: You can see the stars. Conclusion: It is night. Conclusion: The pencil writes well.		
following the word if			
3. The \underline{C} is the part q of a conditional statement following the word then	Write a conditional statement from each of the following. 3. Three noncollinear points determine a plane.		
lolowing the word then.			
4. The <u>E</u> is the statement formed by negating the hypothesis and the conclusion.	If three points are noncollinear, then they determine a plane.		
5. The <u>B</u> is the statement formed by exchanging the	4. Fruit If a food is a kumquat, then it is a fruit.		
hypothesis and the conclusion.	Kumquats		
 The contrapositive is the statement formed by both F and F the hypothesis and the conclusion. 			
Use the following conditional statement for Exercises 7–12.	Determine if each conditional is true. If false, give a counterexample.		
If it is a bicycle, then it has two wheels.	5. If two points are noncollinear, then a right triangle contains one obtuse angle.		
7. Give the hypothesis of the conditional statement.	true		
8. Give the conclusion of the conditional statement. It has two wheels.	If a liquid is water, then it is composed of hydrogen and oxygen.		
 "If it has two wheels, then it is a bicycle." Tell whether this is the converse, the inverse, or the contrapositive 	true		
of the given conditional.	7. If a living thing is green, then it is a plant.		
10. "If it does not have two wheels, then it is not a bicycle."	false; sample answer: a frog 8. "If G is at 4, then GH is 3." Write the converse, inverse, and contrapositive of this		
Tell whether this is the converse, the inverse, or the contrapositive of the given conditional.	6. If G is at 4, then GH is 3. Write the converse, inverse, and converse, and converse and converse interverse at the second		
11. "If it is not a bicycle, then it does not have two wheels."	Converse: If GH is 3, then G is at 4; false		
Tell whether this is the converse, the inverse, or the contrapositive of the given conditional.	Inverse: If G is not at 4, then GH is not 3; false		
12. Tell which of the original statement, the converse, the inverse, and the contrapositive	Contrapositive: If GH is not 3, then G is not at 4; true		
are true statements. (Hint: Can you think of another two-wheeled vehicle?)	This chart shows a small part of the Mammalia		
original statement and contrapositive	class of animals, the mammals. Write a conditional		
Use the following statements for Exercises 13 and 14. Ella says, "When it rains, I go indoors." Casey replies, "I play in the rain if there is no lightning."	to describe the relationship between each given pair.		
 Rewrite Ella's statement as an "if, then" statement. 	9. primates and mammals If an animal is a primate, then it is a mammal.		
If it rains, then I go indoors.	 primates and manimals - unit and the primate, then it is a rodent. lemurs and rodents Sample answer: If an animal is a lemur, then it is not a rodent. 		
14. Rewrite Casey's statement as an "if, then" statement.	11. rodents and apes Sample answer: If an animal is a rodent, then it is not an ape.		
If there is no lightning, then I play in the rain.	12. apes and mammals If an animal is an ape, then it is a mammal.		
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Practice C	Beteach		
Practice C 2-22 Conditional Statements	2-2 Conditional Statements		
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Practice A 2-4 Biconditional Statements and Definitions	Practice B 2-4 Biconditional Statements and Definitions
1. A biconditional statement combines a conditional and its CONVERSE	Write the conditional statement and converse within each biconditional.
2. A biconditional statement can be written in the form "p if and only if q," which	1. The tea kettle is whistling if and only if the water is boiling.
means "if p , then q , and if <u>q</u> , then <u>p</u> ."	Conditional: If the tea kettle is whistling, then the water is boiling.
Write the converse from each given biconditional.	
3. Biconditional: A cat is happy if and only if it is purring.	2. A biconditional is true if and only if the conditional and converse are both true. Conditional: If a biconditional is true, then the conditional and converse are both true
Conditional: If a cat is happy, then it is purring.	Converse: If the conditional and converse are both true, then the biconditional is true
Converse: If a cat is purring, then it is happy.	converse. <u>In the containent and converse and sour day</u> and the promiting do
4. Biconditional: A figure is a segment if and only if it is straight and has two endpoints.	For each conditional, write the converse and a biconditional statement.
Conditional: If a figure is a segment, then it is straight and has two endpoints. Converse: If a figure is straight and has two endpoints, then it is a segment.	3. Conditional: If <i>n</i> is an odd number, then $n - 1$ is divisible by 2.
	Converse: If $n - 1$ is divisible by 2, then n is an odd number. Biconditional: n is an odd number if and only if $n - 1$ is divisible by 2.
Write a biconditional from each given conditional and converse.	
 Conditional: If two angles share a side, then they are adjacent. Converse: If two angles are adjacent, then they share a side. 	 Conditional: An angle is obtuse when it measures between 90° and 180°. Converse: If an angle measures between 90° and 180°, then the angle is obtuse.
Biconditional: Two angles share a side if and only if they are adjacent.	Biconditional: An angle is obtuse if and only if it measures between 90° and 180°.
6. Conditional: If your temperature is normal, then your temperature is 98.6°F.	Diconditional.
Converse: If your temperature is 98.6°F, then your temperature is normal.	Determine whether a true biconditional can be written from each
Biconditional: Your temperature is normal if and only if it is 98.6°F.	conditional statement. If not, give a counterexample.5. If the lamp is unplugged, then the bulb does not shine.
Write True or False for each statement. A biconditional is true only if	No; sample answer: The switch could be off.
both the conditional and the converse are true. If the biconditional is false, give a counterexample.	6. The date can be the 29th if and only if it is not February.
7. Conditional: If $x = 1$, then $x > 0$.	No; possible answer: Leap years have a Feb. 29th.
Converse: If $x > 0$, then $x = 1$.	NU, pussible answel. Leap years nave a reb. 25th.
Biconditional: $x = 1$ if and only if $x > 0$.	Write each definition as a biconditional.
Counterexample: Sample answer: $x = 4$	7. A cube is a three-dimensional solid with six square faces.
8. Conditional: If it is 3:30 A.M., then it is night.	A figure is a cube if and only if it is a three-dimensional solid with six
Converse: If it is night, then it is 3:30 A.M. False False False	square faces.
Biconditional: It is 3:30 A.M. if and only if it is night. Palse Counterexample: Sample answer: It is midnight.	8. Tanya claims that the definition of <i>doofus</i> is "her younger brother."
9. Maria says, "I will graduate from high school if and only if I earn	A person is a doofus if and only if the person is Tanya's younger brother.
a high school diploma." Tell if Maria's biconditional statement is true or false.	
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Practice C P-4 Biconditional Statements and Definitions	Reteach 2-4 Biconditional Statements and Definitions
2-4 Biconditional Statements and Definitions The sex of a human is determined genetically by the distribution of X and Y chromosomes.	 2-4 Biconditional Statements and Definitions A biconditional statement combines a conditional statement, "if p, then q," with its
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Biconditional Statements and Definitions The sex of a human is determined genetically by the distribution of X and Y chromosomes. This table shows all the possible normal and abnormal distributions. Female Male Normal Abnormal Normal Abnormal XX X XXX XY XYY Use the table to determine if a true biconditional statement can be written from each conditional in Exercises 1–4. If not, explain why not.	 2-4 Biconditional Statements and Definitions A biconditional statement combines a conditional statement, "if p, then q," with its converse, "if q, then p."
2-4 Biconditional Statements and Definitions The sex of a human is determined genetically by the distribution of X and Y chromosomes. This table shows all the possible normal and abnormal distributions. <u>Female</u> <u>Male</u> <u>Normal</u> <u>Abnormal</u> <u>Abnormal</u> <u>XX X XY XYY XYY </u>	2-4 Biconditional Statements and Definitions A biconditional statement combines a conditional statement, "if p, then q," with its converse, "if q, then p." p q Conditional: If the sides of a triangle are congruent, then the angles are congruent.
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LESSON Practice A		LESSON Practice B	
Write the letter of the correct justification next to each step.		2-6 Geometric Proof Write a justification for each step.	
(Use one justification twice.)		Given: $AB = EF$, <i>B</i> is the midpoint of \overline{AC} ,	E F
Given: \overrightarrow{HJ} is the bisector of $\angle IHK$ and $\angle 1 \cong \angle$	R	and <i>E</i> is the midpoint of \overline{DF} .	A B C
1. \overrightarrow{HJ} is the bisector of $\angle IHK$ B 2. $\angle 2 \cong \angle 1$ A	A. Definition of ∠ bisectorB. Given	1. <i>B</i> is the midpoint of \overline{AC} , and <i>E</i> is the midpoint of \overline{DF} .	Given
3. $\angle 1 \cong \angle 3$ B	C. Transitive Prop. of \cong	2. $\overline{AB} \cong \overline{BC}$, and $\overline{DE} \cong \overline{EF}$.	Def. of mdpt.
4. ∠2 ≅ ∠3 <u>6</u> 5. In a two-column proof, each	aton in the preef is on the left and	3. $AB = BC$, and $DE = EF$.	Def. of \cong segments
the reason for the step is on the right.	step in the proof is on the left and	4. $AB + BC = AC$, and $DE + EF = DF$.	Seg. Add. Post.
Fill in the blanks with the justifications and s			Subst.
two-column proof. Use this list to complete $\angle 1 \cong \angle 2$	ine prooi.	5. $2AB = AC$, and $2EF = DF$.	Given
Def. of straight \angle $\angle 1$ and $\angle 2$ are straight angles.		$6. \ AB = EF$	
 Given: ∠1 and ∠2 are straight angles. Prove: ∠1 ≅ ∠2 		7. 2 <i>AB</i> = 2 <i>EF</i>	Mult. Prop. of =
Proof: $21 = 22$	2	$8. \ \mathbf{AC} = \mathbf{DF}$	Subst. Prop. of =
Statements	Reasons	9. $\overline{AC} \cong \overline{DF}$	Def. of \cong segments
1. a. $\angle 1$ and $\angle 2$ are straight angles.	1. Given	Fill in the blanks to complete the two-colum	nn proof. 🔨 H
2. $m \angle 1 = 180^{\circ}, m \angle 2 = 180^{\circ}$ 3. $m \angle 1 = m \angle 2$	2. b. <u>Def. of straight ∠</u> 3. Subst. Prop. of =	10. Given: $\angle HKJ$ is a straight angle.	· · · · · · · · · · · · · · · · · · ·
$4. c. \angle 1 \cong \angle 2$	4. Def. of $\cong \triangle$	<i>KI</i> bisects $\angle HKJ$. Prove: $\angle IKJ$ is a right angle.	ale a
Follow the plan to fill in the blanks in the two		Proof:	
7. Given: $\angle 1$ and $\angle 2$ form a linear pair, and $\angle 3$ and $\angle 4$ form a linear pair.	12	Statements	Reasons
Prove: $m \angle 1 + m \angle 2 + m \angle 3 + m \angle 4 = 36$		1. a. ∠HKJ is a straight angle.	1. Given
Plan: The Linear Pair Theorem shows that ∠3 and ∠4 are supplementary. The	definition of supplementary says that	$2. \text{ m} \angle HKJ = 180^{\circ}$	2. b. Def. of straight ∠
$m \ge 1 + m \ge 2 = 180^{\circ}$ and $m \ge 3 + m_{\perp}$ of Equality to make the conclusion.	$\angle 4 = 180^{\circ}$. Use the Addition Property	3. c. \overrightarrow{KI} bisects $\angle HKJ$ 4. $\angle IKJ \cong \angle IKH$	 Given Def. of ∠ bisector
Statements	Reasons	5. m $\angle IKJ = m \angle IKH$	5. Def. of \cong \triangle
1. $\angle 1$ and $\angle 2$ form a linear pair, and $\angle 3$ and $\angle 4$ form a linear pair.	1. a. Given	6. d. $\underline{\mathbf{m} \perp \mathbf{I} \mathbf{K} \mathbf{J} + \mathbf{m} \perp \mathbf{I} \mathbf{K} \mathbf{H} = \mathbf{m} \perp \mathbf{H} \mathbf{K} \mathbf{J}}$	6. ∠ Add. Post.
2. $\angle 1$ and $\angle 2$ are supplementary, and	2. b. Linear Pair Thm.	7. 2m∠ <i>lKJ</i> = 180°	7. e. Subst. (Steps 2, 5, 6)
$\angle 3$ and $\angle 4$ are supplementary. 3. c. $m \angle 1 + m \angle 2 = 180^\circ$, and		$8. \text{ m} \angle IKJ = 90^{\circ}$	8. Div. Prop. of =
$m \ge 1 + m \ge 2 + 100^{\circ}$, and $m \ge 3 + m \ge 4 = 180^{\circ}$	3. Def. of supp. ≜	9. $\angle IKJ$ is a right angle.	9. f. Def. of right ∠
4. $m \angle 1 + m \angle 2 + m \angle 3 + m \angle 4 = 360^{\circ}$	4. d. Add. Prop. of =		
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2-6 Geometric Proof Write a two-column proof. 1. Given: The sum of the angle measures in a triangle is 180°. Prove: $m\angle 1 = m\angle 3 + m\angle 4$ Statements 1. $m\angle 2 + m\angle 3 + m\angle 4 = 180^{\circ}$ 2. $\angle 1$ and $\angle 2$ are supplementary. 3. $m\angle 1 + m\angle 2 = 180^{\circ}$ 4. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3 + 15$. $m\angle 1 = m\angle 3 + m\angle 4$ 2. Peter drives on a straight road and stops at is also straight. Peter notices that one of th a right angle. He concludes that the other th Draw a diagram and write a two-column pro- Possible answer: 3. $\angle 1 = ind\angle 3 + m\angle 4$ 5. $\angle 1 = ind\angle 3 + m\angle 4$ 5. $\angle 1 = ind\angle 4 + ind∠ 4 + $	1. Given 2. Linear Pair Thm. 3. Def. of supp. ▲ • m∠4 4. Subst. Prop. of = 5. Subtr. Prop. of = an intersection. The intersecting road angles formed by the intersecting road angles must also be right angles. iof to show that Peter is correct. Reasons 1. Given 2. Linear Pair Thm. 3. Congruent Supps. Thm. 4. Rt. ∠ ≅ Thm. 5. Def. of supp. ▲ 6. Def. of rt. ∠	2-6 <i>Geometric Proof</i> To write a geometric proof, start with the hypoth of a conditional. Apply deductive reasoning. Prove that the conclusion of the conditional is the Conditional: If \overrightarrow{BD} is the angle bisector of $\angle ABD \cong \angle 1$, then $\angle DBC \cong \angle 1$ Given: \overrightarrow{BD} is the angle bisector of $\angle ABC$, and Prove: $\angle DBC \cong \angle 1$ Proof: 1. \overrightarrow{BD} is the angle bisector of $\angle ABC$. 2. $\angle ABD \cong \angle DBC$ 3. $\angle ABD \cong \angle 1$ 4. $\angle DBC \cong \angle 1$ 1. Given: <i>N</i> is the midpoint of \overrightarrow{MP} , <i>Q</i> is the midpoint of \overrightarrow{RP} , and $\overrightarrow{PQ} \equiv \overrightarrow{NM}$. Prove: $\overrightarrow{PN} \equiv \overrightarrow{QR}$ Write a justification for each step. Proof: 1. <i>N</i> is the midpoint of \overrightarrow{MP} .	Productive Reasoning • Deductive Reasoning • Definitions • Properties • Postulates • Theorems rue. Conclusion $\angle ABC$, and $\angle 1$. $d \angle ABD \cong \angle 1$. • Given 1. Given 2. Def. of \angle bisector 3. Given 4. Transitive Prop. of \cong • $M_{p} = O$ • $M_{p} = O$ • $R_{p} = O$
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2-6 Geometric Proof Write a two-column proof. 1. Given: The sum of the angle measures in a triangle is 180°. Prove: $m\angle 1 = m\angle 3 + m\angle 4$ Statements 1. $m\angle 2 + m\angle 3 + m\angle 4 = 180^{\circ}$ 2. $\angle 1$ and $\angle 2$ are supplementary. 3. $m\angle 1 + m\angle 2 = 180^{\circ}$ 4. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3 + 15$. $m\angle 1 = m\angle 3 + m\angle 4$ 2. Peter drives on a straight road and stops at is also straight. Peter notices that one of the a right angle. He concludes that the other th Draw a diagram and write a two-column pro- Possible answer: 4. $\frac{1}{43}$ 5. $\frac{1}{43}$ 5. $\frac{1}{43}$ 5. $\frac{1}{43}$ 5. $\frac{1}{43}$ 5. $\frac{1}{43}$ 5. $\frac{1}{43}$ 5. $\frac{1}{43}$ 6. $\frac{1}{43}$ 7. $\frac{1}{$	1. Given 2. Linear Pair Thm. 3. Def. of supp. ▲ • m∠4 4. Subst. Prop. of = 5. Subtr. Prop. of = an intersection. The intersecting road a angles formed by the intersection is rere angles must also be right angles. of to show that Peter is correct. Reasons 1. Given 2. Linear Pair Thm. 3. Congruent Supps. Thm. 4. Rt. ∠ ≅ Thm. 5. Def. of supp. ▲ 6. Def. of rt. ∠ 7. Subst.	2-6 <i>Geometric Proof</i> To write a geometric proof, start with the hypoth of a conditional. Apply deductive reasoning. Prove that the conclusion of the conditional is t Conditional: If \overrightarrow{BD} is the angle bisector of $\angle ABD \equiv \angle 1$, then $\angle DBC \equiv \angle 1$ Prove: $\angle DBC \equiv \angle 1$ Proof: 1. \overrightarrow{BD} is the angle bisector of $\angle ABC$. 2. $\angle ABD \equiv \angle 1$ Proof: 1. \overrightarrow{BD} is the angle bisector of $\angle ABC$. 2. $\angle ABD \equiv \angle 1$ Proof: 1. $\overrightarrow{GVen:}$ <i>N</i> is the midpoint of \overrightarrow{MP} , <i>Q</i> is the midpoint of \overrightarrow{RP} , and $\overrightarrow{PQ} \equiv \overrightarrow{NM}$. Proof: 1. <i>N</i> is the midpoint of \overrightarrow{MP} . 2. <i>Q</i> is the midpoint of \overrightarrow{MP} . 3. $\overrightarrow{PN} \equiv \overrightarrow{NM}$ 4. $\overrightarrow{PQ} \equiv \overrightarrow{NM}$ 5. $\overrightarrow{PN} \equiv \overrightarrow{PQ}$	Productive Reasoning • Deductive Reasoning • Definitions • Properties • Postulates • Theorems rue. Conclusion $\angle ABC$, and $\angle 1$. $d \ \angle ABD \equiv \ \angle 1$. • $d \ \angle ABD \equiv \ ABD \equiv \ ABD \equiv 1$. • $d \ \angle ABD \equiv 1$. • $d \$
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			Practice B Flowchart and Paragraph Proofs		
2-7 Flowchart and Paragraph Proofs					
1. Use the given flowchart proof to complete the two-column proof.		1. Use the given two-column proof to write a flowchart proof.			
Given: $m \angle BAC = m \angle EAF$, $m \angle CAD = m$ Prove: $m \angle BAD = m \angle DAF$	n∠DAE	C. P.	Given: $\angle 4 \cong \angle 3$ 2 Prove: $m \angle 1 = m \angle 2$ 2		
		E		< <u>1</u> /4 →	
$\begin{pmatrix} m \angle BAC = m \angle EAF, \\ m \angle CAD = m \angle DAE \end{pmatrix} \begin{pmatrix} m \angle BAC + m \angle CAD = m \angle DAE \end{pmatrix}$			Statements	Reasons	
$\begin{array}{c c} m \angle CAD = m \angle DAE \\ \hline \\ Given \\ \hline \\ $		= m∠ <i>DAF</i>	1. $\angle 1$ and $\angle 4$ are supplementary, $\angle 2$ and $\angle 3$ are supplementary.	1. Linear Pair Thm.	
uiven		$\angle 2$ and $\angle 3$ are supplementary. 2. $\angle 4 \cong \angle 3$	2. Given		
$(\mathbf{w} \in BAC + \mathbf{w} \in CAD = \mathbf{w} \in CAD$	$\square \angle BAC + \square \angle CAD = \square \square \square \angle DAD = \square \angle DAD$		$3. \angle 1 \cong \angle 2$	3. ≅ Supps. Thm.	
$m \angle BAD + m \angle DAE \qquad \qquad$		4. m∠1 = m∠2	4. Def. of ≅ . ▲		
Add. Prop. of = Subst.				$\angle 4 \cong \angle 3$	
				Given	
Statements		Reasons			
$1. \ m \angle BAC = m \angle EAF, \ m \angle CAD = m \angle DA$	AE	1. a. <u>Given</u>	$(\angle 1 \text{ and } \angle 4 \text{ are supplementar})$ $(\angle 2 \text{ and } \angle 3 \text{ are supplementar})$	(y, \rightarrow) $(\angle 1 \cong \angle 2)$	
2. b. $m \angle BAC + m \angle CAD =$		2. Add. Prop. of =	Lin. Pair Thm.	≦ Supps. Thm.	
$\underline{m} \angle EAF + \underline{m} \angle DAE$		-			
3. $m \angle BAC + m \angle CAD = m \angle BAD$, $m \angle EAF + m \angle DAE = m \angle DAF$		3. ∠ Add. Post.		(m∠1 = m∠2	
4. m∠ <i>BAD</i> = m∠ <i>DAF</i>		4. c. Subst.		Def. of ≅ ▲	
L			2. Use the given two-column proof to wr	ite a paragraph proof.	
 Miguel breaks a 17-centimeter-long pencil 9 centimeters long. Use the given paragrag 			Given: $AB = CD$, $BC = DE$ Prove: C is the midpoint of \overline{AE} .		
proof showing that the other piece is 8 cen			Statements	Reasons	
Given: $AC = 17$, $AB = 9$ Prove: $BC = 8$	·	1	1. $AB = CD, BC = DE$	1. Given	
			2. AB + BC = CD + DE	2. Add. Prop. of =	
By the Segment Addition Postulate, the su $AB + BC = AC$. It is given that $AC = 17$ a			3. AB + BC = AC, CD + DE = CE	3. Seg. Add. Post.	
equation $9 + BC = 17$. Using the Subtract			$4. AC = CE$ $5. \overline{AC} \cong \overline{CE}$	4. Subst. 5. Def. of ≅ segs.	
away from both sides shows that $BC = 8$.			6. <i>C</i> is the midpoint of \overline{AE} .	6. Def. of mdpt.	
Statements	0	Reasons		BC = DE, so by the Addition Property of	
1. AB + BC = AC		eg. Add. Post.		DE. But by the Segment Addition Postulate,	
2. $AC = 17$, $AB = 9$ 3. b . $9 + BC = 17$	2. Give				
3. b. 3 + BC = 11 4. c. $BC = 8$	3. Subs			E = CE. Therefore substitution yields	
4. c. <u>BC</u> = b	4. Subt	: Prop. of =		congruent segments, $\overline{AC} \cong \overline{CE}$ and thus	
			C is the midpoint of AE by the	definition of midpoint.	
Convrict (1) to Malt Binehart and Winston	51	Holt Geometry	Copyright © by Holt, Rinehart and Winston. All rights reserved.	52 Holt Geometry	
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			LESSON Reteach		
All fights reserved. LESSON Practice C 27 Flowchart and Paragraph	Proof	s	Reteach	aph Proofs	
Itessor Practice C 2-7 Flowchart and Paragraph 1. A definition of parallel lines is "two coplana	ar lines th	at never intersect." Imagine	2-7 Flowchart and Paragra In addition to the two-column proof, there	aph Proofs e are other types of proofs that you can use	
LESSON Practice C Flowchart and Paragraph 1. A definition of parallel lines is "two coplana railroad tracks or the strings on a guitar. Ar	ar lines th nother w	at never intersect." Imagine ay to think about parallel lines	2-7 Flowchart and Paragra	•	
Practice C Flowchart and Paragraph A definition of parallel lines is "two coplana railroad tracks or the strings on a guitar Ar is that they extend in exactly the same dir if a third line intersects one line in a right a	ar lines th nother wa ection. O angle and	at never intersect." Imagine ay to think about parallel lines to say it more mathematically, intersects a second line in a	Prove the two-column proof, then to prove conjectures are true. Uses boxes and	e are other types of proofs that you can use	
Practice C Flowchart and Paragraph A definition of parallel lines is "two coplana railroad tracks or the strings on a guitar. Ar is that they extend in exactly the same dir if a third line intersects one line in a right a right angle, then the first and second lines	ar lines th nother wa ection. O angle and are para	at never intersect." Imagine ay to think about parallel lines to say it more mathematically, intersects a second line in a	Prove conjectures are true. Stars of the two-column proof, there to prove conjectures are true. Stars of the two-column proof of the two-column proof. Stars of the two-column proof of the two-column proof of the two-column proof.	e are other types of proofs that you can use	
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Itesson Practice C 237 Flowchart and Paragraph 1. A definition of parallel lines is "two coplana railroad tracks or the strings on a guilar. At is that they extend in exactly the same dirr if a third line intersects one line in a right argle, then the first and second lines the final step in a paragraph proof of the fc Given: The sum of the angle measures in triangle is 180°; ∠1 ≡ ∠2	ar lines th nother wa ection. O angle and are para ollowing.	at never intersect." Imagine ay to think about parallel lines to say it more mathematically, intersects a second line in a	2-7 Flowchart and Paragra In addition to the two-column proof, there to prove conjectures are true. Flowchart Proof • Uses boxes and • Steps go left to • The justification	e are other types of proofs that you can use d arrows. right or top to bottom, as shown by arrows. for each step is written below the box.	
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Practice C 4. Addinition of parallel lines is "two coplana railroad tracks or the strings on a guitar. Ar- is that they extend in exactly the same dirr if a third line intersects one line in a right angle, then the first and second lines the final step in a paragraph proof of the f Given : The sum of the angle measures in tringle is $180^\circ, \ \ 1 = \ \ 2$ Prove: \overrightarrow{AB} and \overrightarrow{CD} are parallel lines. (<i>Hint:</i> First draw line \overrightarrow{AE} so it forms a 90° a This step can be justified by the Protractor	ar lines th nother wa ection. O angle and are para ollowing. any any angle with	at never intersect." Imagine ay to think about parallel lines to say it more mathematically, intersects a second line in a llel. Use this last definition as $C \in F$	2-7 Flowchart and Paragra In addition to the two-column proof, there to prove conjectures are true. Flowchart Proof • Uses boxes and • Steps go left to • The justification You can write a flowchart proof of the Ri Given: $\angle 1$ and $\angle 2$ are right angles. Prove: $\angle 1 \cong \angle 2$	e are other types of proofs that you can use d arrows. right or top to bottom, as shown by arrows. for each step is written below the box.	
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Practice C 27 Flowchart and Paragraph 1. A definition of parallel lines is "two coplana railroad tracks or the strings on a guitar. Ar- is that they extend in exactly the same dire if a third line intersects one line in a right angle, then the first and second lines the final step in a paragraph proof of the fc Given: The sum of the angle measures in triangle is 180°; $\angle 1 = \angle 2$ Prove: \overrightarrow{AB} and \overrightarrow{CD} are parallel lines. (<i>Hint:</i> First draw line \overrightarrow{AE} so it forms a 90° at This step can be justified by the Protractor On the figure, label the intersection of \overrightarrow{AE} : Possible answer: Draw \overrightarrow{AE} so it form Postulate. The Angle Addition Post m $\angle FAB$, so by substitution m $\angle F_2$ $\angle AFD$ form a triangle, so by the g m $\angle AFD$ = 180°. Substitution and show that m $\angle AFD$ = 90°. Then by and $\angle AFD$ are right angles. \overrightarrow{AE} in angles, so \overrightarrow{AB} and \overrightarrow{CD} are paralle 2. Write a flowchart proof of the following. Us as a justification to refer to your work in Ex- Given: $\angle 1 = \angle 4$	ar lines the nother we ection. O angle and a are para- ollowing. any angle with r Postular and CD_{1} ms a 90 tulate st AD + I definit FAD + I given in the Sul y the de intersect se "Proof	at never intersect." Imagine ay to think about parallel lines by to think about parallel lines to say it more mathematically, intersects a second line in a lel. Use this last definition as \overrightarrow{F} \overrightarrow{AB} . e. \overrightarrow{AB} e. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AD} f. \overrightarrow{AB} s both \overrightarrow{AB} and \overrightarrow{CD} in right 1'' \overrightarrow{AB} i. \overrightarrow{AB}	2-7 Flowchart and Paragra In addition to the two-column proof, then to prove conjectures are true. Flowchart Proof \cdot Uses boxes an \cdot Steps go left to \cdot The justification You can write a flowchart proof of the Ri Given: $\angle 1$ and $\angle 2$ are right angles. Prove: $\angle 1 \equiv \angle 2$ $(\angle 1 \equiv d \angle 2)$ $(\Box \equiv d \angle d \angle 2)$ $(\Box \equiv d \angle d \angle d \\ d \angle d \\ d \\ d \\ d \\ d \\ d \\$	e are other types of proofs that you can use d arrows. right or top to bottom, as shown by arrows. for each step is written below the box. ght Angle Congruence Theorem. $\Delta_1 = 2$ $\Delta_2 = 2$ $\Delta_1 = 2$ $\Delta_2 = 2$ $\Delta_2 = 2$ $\Delta_1 = 2$ $\Delta_2 = 2$	
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