Unit 2 EOC Review   Name:_____

Determine the converse, inverse, and contrapositive of the conditional statements. Indicate whether each statement is true or false.

1. Conditional Statement: If two lines are parallel, then their same side interior angles are supplementary.

Converse:_____ T/F

Inverse:_____ T/F

Contrapositive: _____ T/F

Biconditional (if possible. If not, explain)_____

Which is the contrapositive of the statement "If a number is a natural number, then it is an integer." ?

A. If a number is an integer, then it is a natural number.

B. If a number is not a natural number, then it is not an integer.

C. If a number is not an integer, then it is not a natural number.

D. If a number is not a natural number, then it is an integer.

Statement A: "If it rains, then the softball game will be canceled."

Statement B: "If it does not rain, then the softball game will not be canceled."

Statement B is the –

A. Inverse   C. Contrapositive
B. Converse   D. Biconditional

Which statement is true?

A. The diagonals of a rhombus are congruent and 10 is a prime number.

B. The diagonals of a rhombus are congruent or 10 is a prime number.

C. The diagonals of a rhombus are not congruent and 10 is not a prime number.

D. The diagonals of a rhombus are congruent and 10 is not a prime number.

Statement X: "If two circles are congruent, then their diameters are congruent."

Statement Y: "If the diameters of two circles are congruent, then the circles are congruent."

Statement Y is the –

A. Inverse   C. Contrapositive
B. Converse   D. Biconditional

Identify the property that justifies each statement.

2. If $\angle ABC \cong \angle DEF$, then $\angle DEF \cong \angle ABC$.
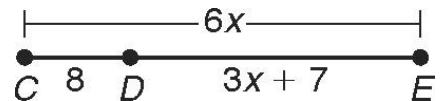
3. $\angle 1 \cong \angle 2$ and $\angle 2 \cong \angle 3$, so $\angle 1 \cong \angle 3$.
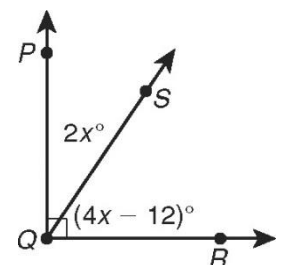
4. If $FG = HJ$, then $HJ = FG$.

5. $\overline{WX} \cong \overline{WX}$

Write a justification for each step.
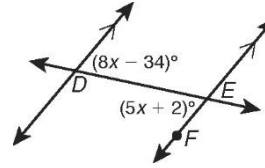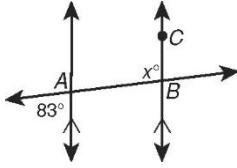
6. $CE = CD + DE$ _____

$6x = 8 + (3x + 7)$ _____

$6x = 15 + 3x$ _____

$3x = 15$ _____

$x = 5$ _____

7. $m\angle PQR = m\angle PQS + m\angle SQR$ _____

$90° = 2x° + (4x - 12)°$ _____

$90 = 6x - 12$ _____

$102 = 6x$ _____
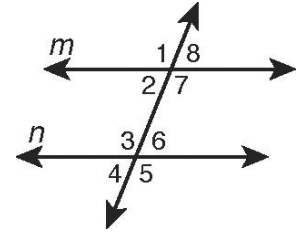
$17 = x$ _____

Find each angle measure.

8. m∠ABC _____

9. m∠DEF _____

Use the figure for Exercises 15-18. Tell whether lines m and n
must be parallel from the given information. If they are, state
your reasoning. (Hint: The angle measures may change for
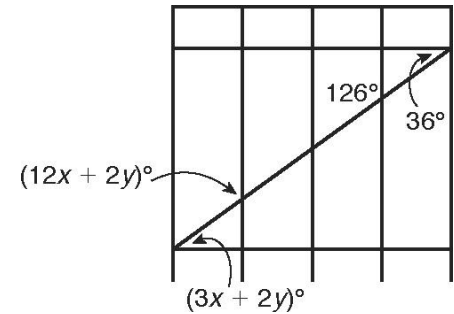*each exercise, and the figure is for reference only.)*

10. ∠7 ≅ ∠3

11. m∠3 = (15x + 22)°, m∠1 = (19x − 10)°, x = 8

_____

_____

12. ∠7 ≅ ∠6

13. m∠8 = (6x − 1)°, m∠4 = (5x + 3)°, x = 9

_____

_____

14. In the diagram of the gate, the horizontal bars
are parallel and the vertical bars are parallel.
Find x and y.

_____

15. A bedroom has sloping ceilings as shown. Marcel is hanging
a shelf below a rafter. If m∠1 = (8x − 1)°, m∠2 = (6x + 7)°,
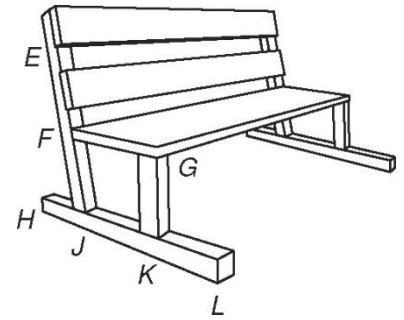and x = 4, show that the shelf is parallel to the rafter above it.

_____
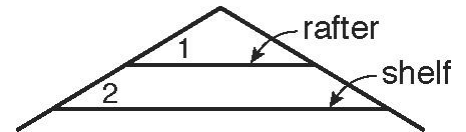
16. For two parallel lines and a transversal, m∠1 = 83°. For which pair of angle measures is the sum the least

    A) ∠1 and corresponding angle

    B) ∠1 and a same-side interior angle

    C) ∠1 and its supplement

    D) ∠1 and its complement

Choose the best answer.

17. In the bench, m∠EFG = (4n + 16)°, m∠FJL = (3n + 40)°,
    m∠GKL = (3n + 22)°, and n = 24. Which is a true statement?

   A) $\overline{FG} \| \overline{HK}$ by the Converse of the Corr. ∡ Post.

   B) $\overline{FG} \| \overline{HK}$ by the Converse of the Alt. Int. ∡ Thm.

   C) $\overline{EJ} \| \overline{GK}$ by the Converse of the Corr. ∡ Post.

   D) $\overline{EJ} \| \overline{GK}$ by the Converse of the Alt. Int. ∡ Thm.

18. Complete the following two-column proof (Number of steps will vary)

Given: ∠1 ≅ ∠2, ∠3 ≅ ∠1

Prove: $\overline{XY} \| \overline{WV}$

Statements	Reasons

19. Complete the following two-column proof

Given: $\overleftrightarrow{AB} \perp \overleftrightarrow{BC}$, m∠1 + m∠2 = 180°

Prove: $\overleftrightarrow{BC} \perp \overleftrightarrow{CD}$
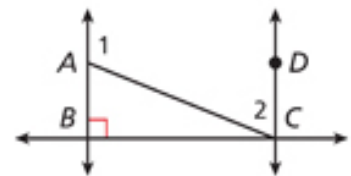
Statements	Reasons
1. $\overleftrightarrow{AB} \perp \overleftrightarrow{BC}$	1. Given
2. m∠1 + m∠2 = 180°	2.
3.	3. Def of Supplementary
4.	4. Converse of Same Side Int. ∠'s Theorem
5.	5.