Ch 2 Practice Test

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

1. If possible, use the Law of Detachment to draw a conclusion from the two given statements. If not possible, write not possible.

Statement 1: If x = 3, then 3x - 4 = 5.

Statement 2: x = 3

(a) 3x - 4 = 5b. x = 3

If 3x - 4 = 5, then x = 3.

d. not possible

2. BD bisects $\angle ABC$. $m\angle ABC = 7x$. $m\angle ABD = 3x + 25$. Find $m\angle DBC$.

125

175

Which biconditional is NOT a good definition?

A whole number is odd if and only if the number is not divisible by 2.

An angle is straight if and only if its measure is 180.

A whole number is even if and only if it is divisible by 2. Not practise.

d. A ray is a bisector of an angle if and only if it splits the angle into two angles.

4. Use the Law of Detachment to draw a conclusion from the two given statements. If not possible, write not THE CONDITIONAL IS BACKWARDS!! possible. ronce

I can go to the concert if I can afford to buy a ticket.

I can go to the concert.

HYPOTHESIS

I can afford to buy a ticket.

I cannot afford to buy the ticket.

If I can go to the concert, I can afford the ticket.

d. not possible

\$SITUATION RELATES TO CONCUESION NOT HYPTH

Use the Law of Detachment and the Law of Syllogism to draw a conclusion from the three given statements.

Ulf an elephant weighs more than 2,000 pounds, then it weighs more than Jill's car.

If something weighs more than Jill's car, then it is too heavy for the bridge.

Smiley the Elephant weighs 2,150 pounds. a.) Smiley is too heavy for the bridge.

b. Smiley weighs more than Jill's car.

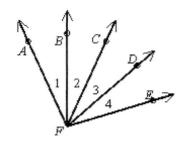
If Smiley weighs more than 2000 pounds, then Smiley is too heavy for the bridge.

If Smiley weighs more than Jill's car, then Smiley is too heavy for the bridge.

Fill in each missing reason.

6. Given: $m \angle 1 = m \angle 3$

Prove: $m \angle AFC = m \angle DFB$



$$m\angle 1 = m\angle 3$$

$$m\angle 1 + m\angle 2 = m\angle 3 + m\angle 2$$

$$m\angle 1 + m\angle 2 = \angle AFC$$

$$m\angle 3 + m\angle 2 = \angle DFB$$

$$\angle AFC = \angle DFB$$

- a. Given
- b. Addition Property of Equality
- c. ? Avale Addition Post.
- **d.** Substitution Property

- Addition Property of Equality
- b. Angle Addition Postulate

- Multiplication Property of Equality
- Division Property of Equality

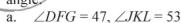
7. Name the Property of Equality that justifies the statement:

If
$$p = q$$
, then $p - r = q - r$.

- Reflexive Property
- **Multiplication Property**

- c. Symmetric Property
- (d.) Subtraction Property

8. $\angle DFG$ and $\angle JKL$ are complementary angles. $m\angle DFG = x + 5$, and $m\angle JKL = x - 9$. Find the measure of each Sum is 900

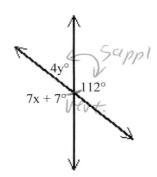


 $\angle DFG = 47, \angle JKL = 43$

9. Find the values of x and y.

- c. $\angle DFG = 52$, $\angle JKL = 48$
- (x+5)+(x-9)=90
- (d.) $\angle DFG = 52$, $\angle JKL = 38$ $2 \times -4 = 90$ $M \leftarrow DFG = 47+5=52$ 2×-94

MLJKL = 47-9=38



Drawing not to scale

a.
$$x = 15, y = 17$$

b. $x = 112, v = 68$

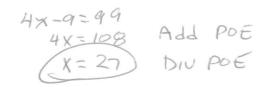
- $7x +7 = 112 \quad (v=0+ 215)$ 7x = 105 X = 15 $4y = 112 = 180 \quad (suppl 215)$ 4y = 68 4y = 68
 - c. x = 68, y = 112
 - d. x = 17, y = 15

Short Answer

10. Solve for x. Justify each step.

$$4x - 9 = 99$$

$$X = 27$$



11. Write the converse of the statement. If the converse is true, write *true*; if not true, provide a counterexample.

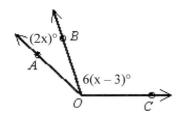
If
$$x = 4$$
, then $x^2 = 16$.

If
$$x = 4$$
, then $x^2 = 16$.

Fill in each missing reason.

Fill in each missing reason.

12. Given: $m\angle AOC = 150$



Drawing not to scale

 $m\angle AOB + m\angle BOC = m\angle AOC$ a. $\angle Add$ Post

$$2x + 6(x - 3) = 150$$

$$2x + 6x - 18 = 150$$

$$mZBOC = mZAOC$$
 a. $ZAGE$
 $2x + 6(x - 3) = 150$ b. $Subst$ POE
 $2x + 6x - 18 = 150$ c. $Distrib$ $PROP$
 $8x - 18 = 150$ d. $Simplify$

$$8x - 18 = 150$$

$$8x = 168$$
 e. Add POE

$$x = 21$$

$$x = 21$$
 f. Div POE

13. **Given:** AC = 32

Drawing not to scale

$$AB + BC = AC$$
 a. \underline{Seg} Add Post $2x + 6x + 8 = 32$ b. \underline{Subst} PoE

$$8x + 8 = 32$$
 c. Simplify
 $8x = 24$ d. Subt POE

$$8x = 2$$

$$x = 3$$

$$x = 3$$
 e. Div PoE

Essay

14. Assume that the following statements are true.

i. If Cecil makes his bed, then it is morning.

ii. If it is 8 p.m., then Vami brushes her teeth. 3 but we don't know if she brushes in the moining.

iii. If it is morning, then Ted listens to the radio 4

v. Cecil makes his bed.

iv. If it is afternoon, then Jeanette takes her daily swim.

The less that the swim is parted as the swim is p

For each statement below, write must be true, may be true, or not true. Use only the information given above. Explain your answers.

a. Ted listens to the radio.

b. Tami does not brush her teeth. MAYBE 3

c. Jeanette takes her daily swim. NOT TRUE (5)

15. Given: $\angle 1$ and $\angle 2$ are complementary, and $\angle 2$ and $\angle 3$ are complementary.

Prove: $\angle 1 \cong \angle 3$

PROOF: LI, LZ compl ml1+ml2=90 defn romp1 L's L3, LZ compl Given ML3 + ML2 = 90 defin compl L's

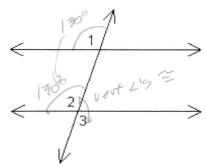
MLI+MLZ = MLZ+MLZ Subst ROE

11 = 13 defn = 1's

Fill in each missing reason.

16. Given: $\angle 1 \cong \angle 2$, $m \angle 1 = 130$

Prove: $m \angle 3 = 130$



Drawing not to scale

 $21 \approx 22$, $m \ge 1 = 130$ a. Given $m \ge 2 = 130$ b. Subst Pot 22 = 23 c. Vert 21s \approx 23 = 130 d. Subst Pot

Other

17. Write the two conditional statements that form the given biconditional. Then decide whether the biconditional is a good definition. Explain.

Three points are collinear if and only if they are coplanar.

If 3 pts are collinear than they are coplanar

If 3pts are coplanar then they are collinear

Not Good defn.
coplanar
st pts may not be collinear