

Logic Independent Practice

p.56-57

1. Raphael just bought a piece of furniture from a store that sells only sofas and chairs. Which of the following is true?

- (A) the piece of furniture is a sofa
- (B) the piece of furniture is a chair
- (C) the piece of furniture is not a leather sofa
- (D) the piece of furniture is not a wooden chair
- (E) the piece of furniture is not a wooden table

2. if $p < q$, $r < s$, and $r < q$, which of the following must be true?

- ~~I. $p < s$~~
- ~~II. $s < q$~~
- ~~III. $r < p$~~

$p = 5$ $q = 6$
 $r = 1$ $s = 2$

- (A) None
- (B) I only
- (C) III only
- (D) I and II
- (E) II and III

$r < s$
 $r < q$
 $p < q$

3. A computer randomly selects a positive, two-digit number. If the number selected is prime, twice that number is displayed. If the number selected is not prime, the number itself is displayed. If the number displayed is 34, which of the following could be true?

- I. The number selected is 17 $\rightarrow 34$
- II. The number selected is 34 $\rightarrow 34$
- III. The number selected is 68 $\rightarrow 68$

- (A) I only
- (B) II only
- (C) I and II only
- (D) I and III only
- (E) I, II, and III only

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p.56-57

4. At Fremont High School, some members of the girls soccer team also play softball. No girls on the softball team are seniors. Which of the following must also be true?

- (A) No members of the soccer team are seniors
- (B) Some members of the soccer team are seniors
- (C) Some members of the soccer team are not seniors
- (D) More seniors are on the softball team than are on the soccer team
- (E) More seniors are on the soccer team, than are on the softball team

5. if $a < b < c < 0$, which of the following must be true?

~~I. $a < b < c$~~
~~II. $-c < -a$~~
~~III. $a + b < b + c$~~

~~(A) I only~~
~~(B) III only~~
~~(C) I and II only~~
 (D) II and III only
~~(E) I, II, and III~~

$a = -3$
 $b = -2$
 $c = -1$

I. $-3 + 2 < -2 + (-1)$
 $-1 < -1$

II. $1 < 3$

6. Sidney, Rudy and Natalie are unwilling to reveal their individual ages. However, they will share the following information.

- the combined ages of Natalie and Rudy is 82
- the combined age of Rudy and Sidney is 83
- the combined age of Sidney and Natalie is 85.

How old is Natalie?

(A) 40
 (B) 41
 (C) 42
~~(D) 43~~
~~(E) 44~~

$N = 42$
 $R = 40$
 $S = 43$

~~$N = 43$
 $R = 82 - 43 = 39$
 $S = 85 - 43 = 42$~~

KAP Wrap

p.58

If the weather is windy, the marching band will practice in the gym. If the weather is rainy, practice is canceled.

Using this statement, write three statements that will not be true.

Using the statement provided, write two statements that will always be true.

EXPRESSIONS

p.71

Thinking KAP

Look at the equations below. Use the equations to assign an operation to each symbol.

$$27 \star 3 = 9$$

\star is division

$$0.8 \blacktriangledown 10 = 8$$

\blacktriangledown is multiplication

$$16 \blacksquare 1 = 15$$

\blacksquare is subtraction

$$21 \blacklozenge 1 = 22$$

\blacklozenge is addition

Use what you know about the symbols to solve the problems below.

$$22 \blacksquare 10 \blacklozenge 7 = 22 - 10 + 7 = 19$$

$$3 \blacktriangledown 5 \blacklozenge 4 = 3 \cdot 5 + 4 = 19$$

$$(19 \blacksquare 1) \star 3 = (19 - 1) \div 3 = 18 \div 3 = 6$$

$$3 \blacksquare 5 \blacktriangledown 2 =$$

$$3 - 5 \cdot 2 = 3 - 10 = -7$$

Translation 101

p.72

| Operation | Words |
|-----------|---|
| + | plus, more than, greater in addition, |
| - | difference, less than goes away, fewer, disappears |
| ÷ | quotient, separated, per cut in half, peices |
| x | product, multiple |

When you see more than or less than, how can you tell if it means addition/subtraction or an inequality?

6 more than w : $6 + w, w + 6$

6 is more than w : $6 > w$