**Question 1: E**

**Explanation:**
The expression (-2*x* - 6)2 can be rewritten as [-2(*x* + 3)]2, which equals 4(*x* + 3]2.
Since *y* = (*x* + 3)2, it follows that (-2*x* - 6)2 = 4(*x* + 3)2 = 4*y*. The correct answer is choice (E).

**Question 2: D**

**Explanation:**

To solve this problem, it is helpful to draw segment *OB* in the figure. Since *OB* and *OD* are both radii of the circle, they both equal 5. Therefore, the angles opposite these congruent sides of
 *BOD* are congruent and  *OBD* = 36°. The third angle of the triangle,  *BOD*, equals
180°- 36°- 36° = 108°. Arc *BCD* is a fraction of the circumference of the circle and more specifically equals , which equals  The correct answer is choice (D).

**Question 3: A**

##### Explanation:

When the denominator of a fraction is increased, the value of the fraction decreases. Therefore, adding 1 go *b*, *d*, or *e* will decrease the sum *S*. Increasing one of the numerators, either *a* or *c*, will increase *S*. Adding 1 to *a* changes    to   , thereby increasing *S* by   . Adding 1 to *c* changes  to , thereby increasing *S* by . Since*b*<*d*, then . Therefore, adding 1 to *a* will result in the greatest increase in *S*. The correct answer is (A).

(from the October 14, 1997 test)

**Question 4: A**

##### Explanation:

Substituting 10 for *a* and 2 for *b* in the expression  yields 
The correct answer is (A).

**Question 5: A**

**Explanation:**

If *m* is even, then the expression (*m* + *p*) x *m* will always be even and it cannot be determined whether *p* is even or odd. This eliminates choices (C) and (D). If *m* is odd, then (*m* + *p*) x *m* will be even only when *m* + *p* is even and *m* + *p* will be even only when *p* is odd. The correct answer is (A) since the truth of statement (A) also eliminates choices (B) and (E).
 **Question 6: A**Explanation:

Substituting *xy*  = 2 into the equation *xy*2 = 8, you will obtain (*xy*)*y* = 2*y* = 8, thus *y* = 4. To find *x*, substitute *y* = 4 into one of the two original equations to obtain *x* = . The answer to this problem is (A).