UNIT 13 EXERCISES 6-10

SYSTEM OF EQUATIONS

2011A

7. **Answer (B):** Because $x \leq 99$ and $\frac{1}{2}(x+y) = 60$, it follows that $y = 120 - x \geq 120 - 99 = 21$. Thus the maximum value of $\frac{x}{y}$ is $\frac{99}{21} = \frac{33}{7}$.

2006A

9. **(A)** Let p be the cost (in cents) of a pencil, and let s be the cost (in cents) of a set of one pencil and one eraser. Because Oscar buys 3 sets and 10 extra pencils for \$1.00, we have

$$3s + 10p = 100.$$

Thus $3s$ is a multiple of 10 that is less than 100, so s is 10, 20, or 30. The corresponding values of p are 7, 4, and 1. Since the cost of a pencil is more than half the cost of the set, the only possibility is $s = 10$.