3.5 pg. 197 #8-46 even, skip 22 & 24

(8) The student did not include zero.

(10) Roster form = $\{1, 2, 3, 4, 6, 12\}$
Set-builder notation = $\{x \mid x$ is a real # that is a factor of $12\}$

(12) $\emptyset$, $\{r \mid r$ is an even natural number, $r < 2\}$

(14)
$$5r + 8 < 63$$
$$-8 \quad -8$$
$$5r < 55$$
$$r < 11$$

$\{r \mid r < 11\}$

(16)
$$7 - 3d \geq 28$$
$$-7 \quad -7$$
$$-3d \geq 21$$
$$d \leq -7$$

$\{d \mid d \leq -7\}$

(18)
$$3(2K + 12) < -42$$
$$6K + 36 < -42$$
$$-36 \quad -36$$
$$6K < -78$$
$$K < -13$$

$\{K \mid K < -13\}$

(20) $\emptyset$, $\{0\}$, $\{1\}$, $\{2\}$, $\{0,1\}$, $\{0,2\}$, $\{1,2\}$, $\{0,1,2\}$

8 subsets

skip

(22) $\emptyset$, $\{-2\}$, $\{2\}$, $\{-2,2\}$ 4 subsets

(24) $\emptyset$, $\{+\}$, $\{-\}$, $\{\times\}$, $\{\div\}$, $\{+,-\}$, $\{+,\times\}$, $\{+,\div\}$, $\{-,\times\}$, $\{-,\div\}$, $\{\times,\div\}$, $\{+,-,\times\}$ . . .

(26) $P' = \{1,3,5,7\}$

(28) $T' = \{2\}$

(30) TRUE

(32) False, subset B is missing 1 & 3, from universal set A

(34) $B = \{x \mid x$ is all natural numbers, $x \geq 11\}$

(36) $S = \{x \mid x$ is all factors of $12\}$

(38) $B' = \{$Alabama, Alaska, Arkansas, Arizona$\}$

Skip

(39) $P' = \{\text{Mercury, Venus, \& Earth}\}$

(40) $-2(3x+7) > -14$

$-6x - 14 > -14$

$+14 \quad +14$

$\frac{-6x}{-6} > \frac{0}{-6}$

$x < 0$

$\{x \mid x < 0\}$

(42) $-2(3x+7) \geq -14 - 6x$

$-6x - 14 \geq -14 + 6x$

$+14 \quad +14$

$-6x \geq -6x$

$+6x \quad +6x$

$0 \geq 0$

$\{x \mid x \text{ is a real number}\}$

(44) $-3(4x+8)+1 \geq -23 - 12x$

$-12x + -24 + 1 \geq -23 - 12x$

$-12x + -23 \geq -23 - 12x$

$+23 \quad +23$

$-12x \geq -12x$

$+12x \quad +12x$

$0 \geq 0$

$\{x \mid x \text{ is a real \#}\}$

(46) $C' = \{6, 10, 14\}$