A27

3.6

pgs. 144-146 / 3-7 all, 13, 21, 27-33 odd, 43, 44

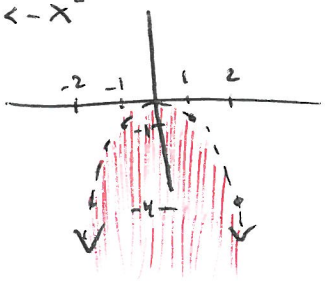
3. $y \leq$ — solid line, shade down — (3) C

4. $y > -x^2$ — dotted, shade up, sad — (4) A

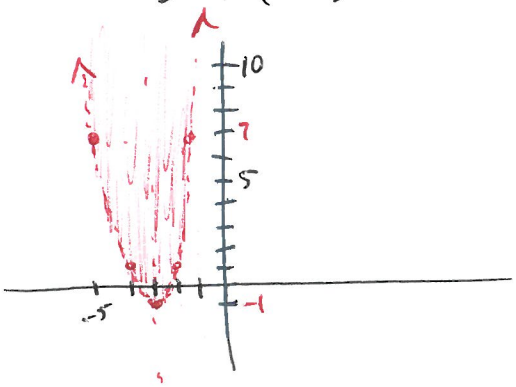
5. $y < x^2$ — dotted, shade down, happy — (5) B

6. $y \geq x^2$ — solid, shade up — (6) D

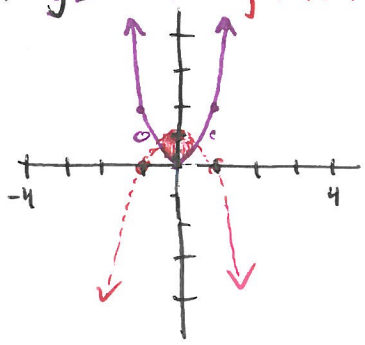
7. $y < -x^2$



13. $y > 2(x+3)^2 - 1$



21. $y \geq 2x^2$ $y < -x^2 + 1$



27. $4x^2 < 25$

$-25 = -25$

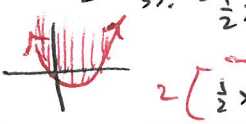
$4x^2 - 25 < 0$

$(2x+5)(2x-5) = 0$

$2x+5=0$ $\quad 2x-5=0$

$x = -\frac{5}{2}$ $\quad x = \frac{5}{2}$

(27) $\boxed{-\frac{5}{2} < x < \frac{5}{2}}$



29. $x^2 - 11x \geq -28$

$+28 = +28$

$x^2 - 11x + 28 \geq 0$

-7×-4, 28, -11

$(x-7)(x-4) = 0$

$x = 7$ $\quad x = 4$

(29) $\boxed{x \leq 4 \text{ or } x \geq 7}$

happy c/2 sol.

31. $2x^2 - 5x - 3 \leq 0$

-6×1, -6, -5

$2x^2 - 6x + x - 3 = 0$

$2x$, 1

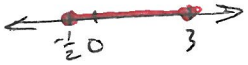
$2x(x-3) + 1(x-3) = 0$

$(x-3)$

$(x-3)(2x+1) = 0$

$x = 3$ $\quad x = -\frac{1}{2}$

(31) $\boxed{-\frac{1}{2} \leq x \leq 3}$



39. $\frac{1}{2}x^2 - x > 4$

$-4 = -4$

$2\left[\frac{1}{2}x^2 - x - 4 > 0\right]$

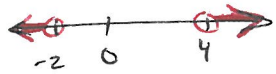
$x^2 - 2x - 8 > 0$

-4×2, -8, -2

$(x-4)(x+2) = 0$

$x = 4$ $\quad x = -2$

(33) $\boxed{x < -2 \text{ or } x > 4}$



43.

a. $y >$ (43a) $\boxed{x_1 < x < x_2}$

b. $y <$ (43b) $\boxed{x < x_1 \text{ or } x < x_2}$

c. (43c) $\boxed{x_1 < x < x_2}$

44. Perim $= 400$ ft

$2l + 2w = 400$ ft

$\frac{2}{} \quad = \quad \frac{2}{}$

$l + w = 200$

$-l \quad = \quad -l$

$w = 200 - l$

Area ≥ 9100 ft

$l \cdot w \geq 9100$ ft

$l \cdot (200 - l) \geq 9100$

$200l - l^2 \geq 9100$

$l^2 - 200l + 9100 \leq 0$

-70×-130, 9100, -200

$(l-70)(l-130) = 0$

$l = 70$ $\quad l = 130$

$w = 70$ $\quad w = 130$

(44) $\boxed{70 \leq w \leq 130}$