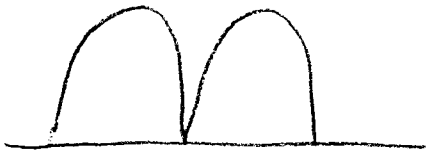
HW:
Pg. 536/7 #35-39

ART GALLERY:
WALLS ⇒



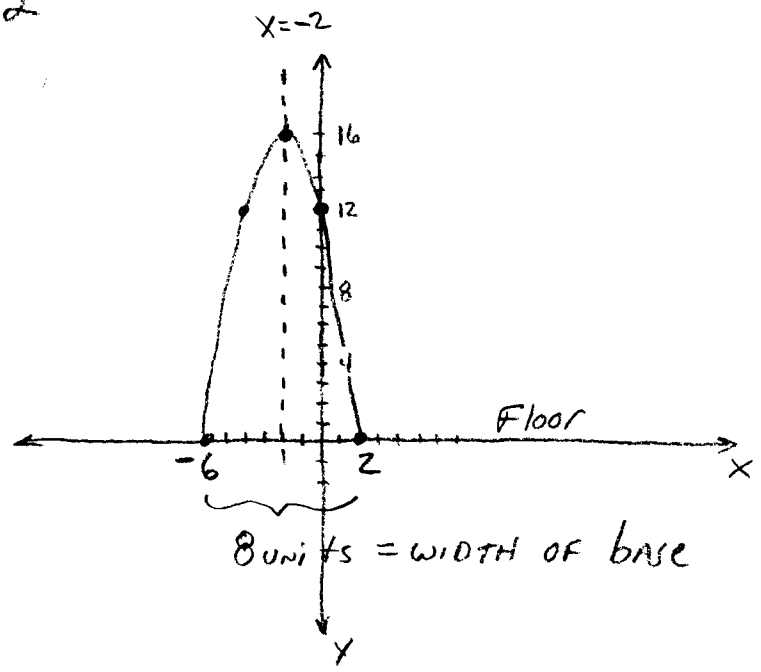
$y = f(x) = -x^2 - 4x + 12$

$a = -1$
$b = -4$
$c = 12$

$x = \frac{-b}{2a} = \frac{-(-4)}{2(-1)} = \frac{4}{-2}$

$x = -2$

X	Y
Vertex -2	$-(-2)^2 - 4(-2) + 12$
	$-4 + 8 + 12 = 16$
0	12
$\therefore -4$	12 By symmetry



8 units = WIDTH OF base

Find roots ⇒ $y = 0 = -x^2 - 4x + 12$
sum ⇒ -4
prod ⇒ -12
$+2 \quad -6$

$(-x^2 - 6x) + (2x + 12) = 0$
$-x(x+6) + 2(x+6) = 0$
$(x+6)(-x+2) = 0$

(35) $x = \{-6, 2\}$

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X-INTERCEPTS

WATCH OUT! WHY IS THIS +2 NOT −2?

(36) Floor of each segment is 8 ft.

(37) HEIGHT OF ARCH = 16 ft

(38) $A = \frac{2}{3}bh$

A = area (ft^2)
b = base (ft)
h = height (ft)

$A = \frac{2}{3} \cdot \frac{8}{1} \cdot \frac{16}{1} = \frac{256}{3} = 85\frac{1}{3}\ ft^2$

(39) Cost to Paint 12 Arches, 27 ¤, 2 coats, $200\ ft^2$/gal

$\frac{256}{3}\ ft^2 = \frac{256}{200}\ \frac{gal}{arch} \cdot \frac{12\ arch}{1} \cdot 2\ coats$

$\frac{200\ ft^2}{1\ gal} = \frac{256}{100} \cdot \frac{6}{12}^{3} = 10.3 = 11\ gal$

$\times 27$
5025
¤297