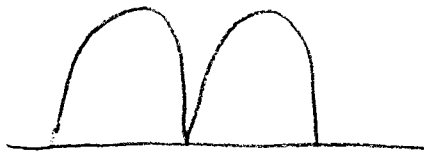


ART GALLERY:
WALLS $\Rightarrow$



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

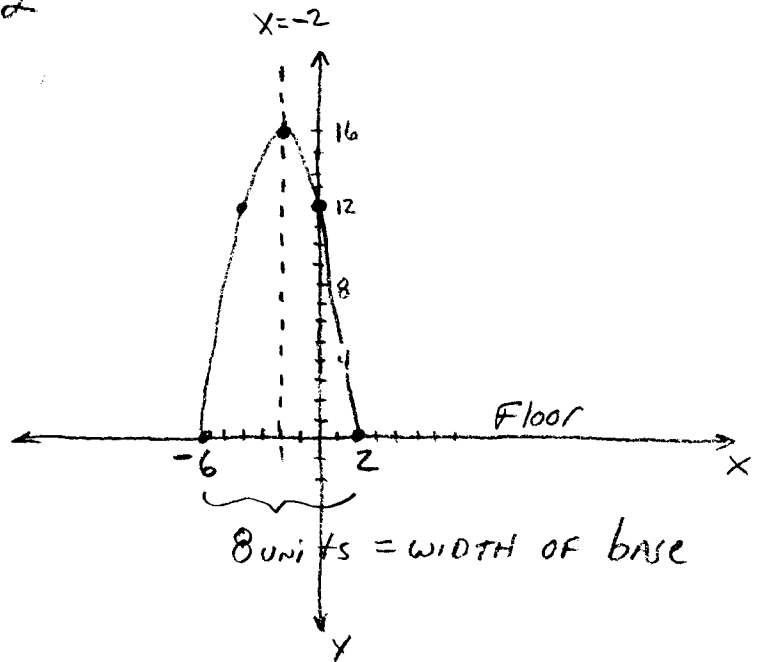
$a = -1$
 $b = -4$
 $c = 12$



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

$$x = -2$$

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



Find roots $\Rightarrow y = 0 = -x^2 - 4x + 12$

Sum $\Rightarrow -4$
Prod $\Rightarrow -12$
 $+2 \quad -6$

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

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

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

$$x = \{-6, 2\}$$

X-intercepts WATCH OUT!
Why is THIS
+2 NOT -2?

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

36 Floor of Each segment is 8 ft.

37 HEIGHT OF Arch = 16 ft.

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

$A = \text{Area (ft}^2\text{)}$
 $b = \text{base (ft)}$
 $h = \text{height (ft)}$

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

39 Cost to Paint 12 Arches,
 $27\frac{1}{2} \text{ gal, 2 coats, } 200 \text{ ft}^2 \text{ gal}$

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

$$\frac{256}{1} \frac{\text{ft}^2}{\text{gal}} = \frac{256 \cdot 24}{5025} = 10.3 = 11 \text{ gal}$$

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