

PRE-AP ALGEBRA 2

Solve the indicated absolute value equations for x .
Be sure to check your solutions in the original equation.

1) $|x + 2| = -4$

no solution ← the absolute value cannot be negative

2) $|x + 2| = 4$

• $-(x+2) = 4, -x-2=4, x+2=-4$
 $x=-6$ ✓

• $x+2=4, x=2$ ✓

3) $|x + 2| = \frac{1}{2}x + 4$

• $-(x+2) = \frac{1}{2}x + 4, -x-2 = \frac{1}{2}x + 4$ ✓
 $\frac{3}{2}x = -6, x = -4$

• $x+2 = \frac{1}{2}x + 4, \frac{1}{2}x = 2, x = 4$ ✓

3C.5 CLASSWORK

4) $|x + 2| = 3x + 4$

• $-(x+2) = 3x+4, -x-2=3x+4,$
 $4x = -6, x = -\frac{6}{4} = -1.5$ ✗

• $x+2 = 3x+4, 2x = -2, x = -1$ ✓

5) $|x + 2| = \frac{1}{2}x - 1$

• $-(x+2) = \frac{1}{2}x - 1, -x-2 = \frac{1}{2}x - 1,$
 $\frac{3}{2}x = -1, x = -\frac{2}{3}$ ✗

• $x+2 = \frac{1}{2}x - 1, \frac{1}{2}x = -3, x = -6$ ✗