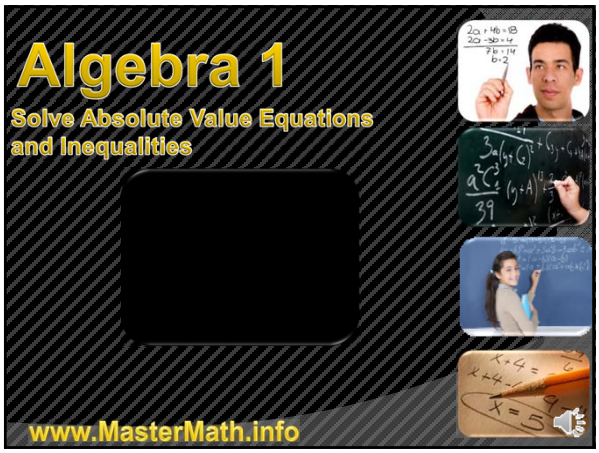
Algebra 1
Solve Absolute Value Equations and Inequalities
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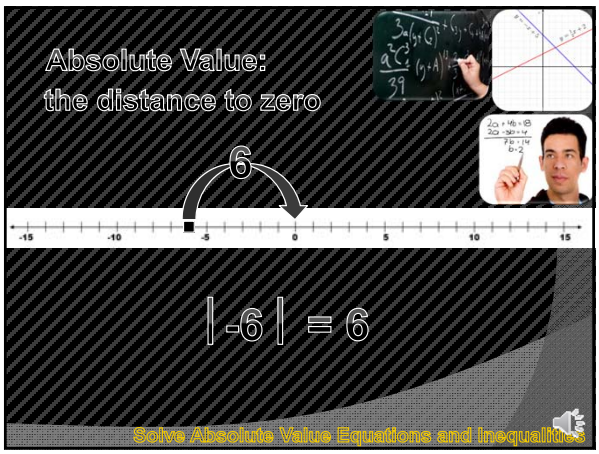
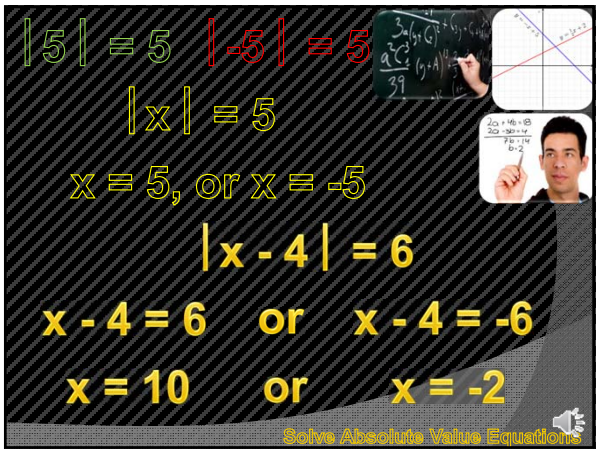
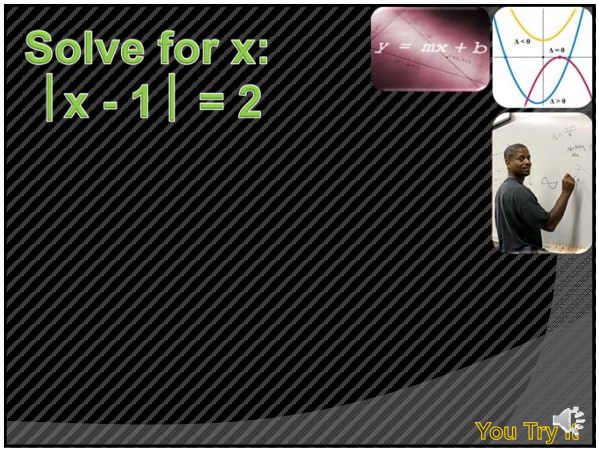
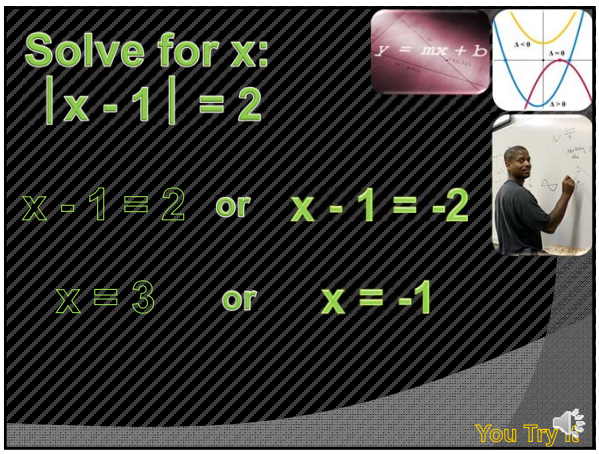
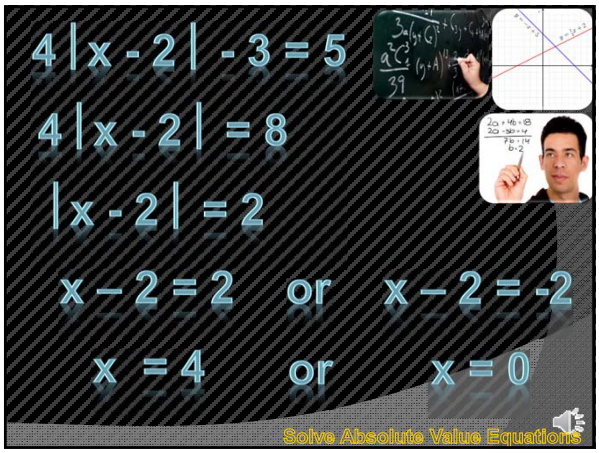
Absolute Value
Absolute Value Equation
Absolute Value Inequality
Overview

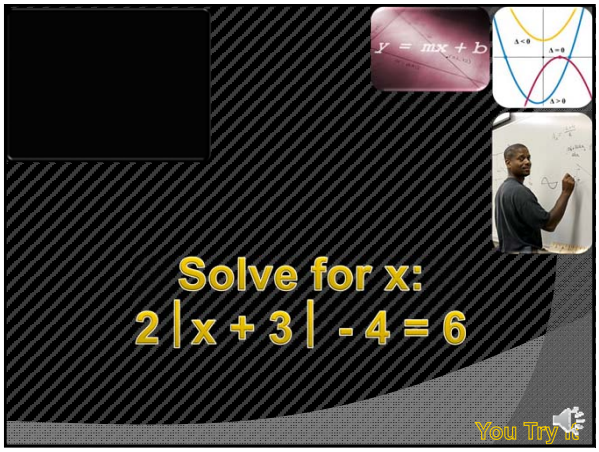

Absolute Value:
the distance to zero
6
-15
-10
-5
0
5
10
15
| -6 | = 6
Solve Absolute Value Equations and Inequalities

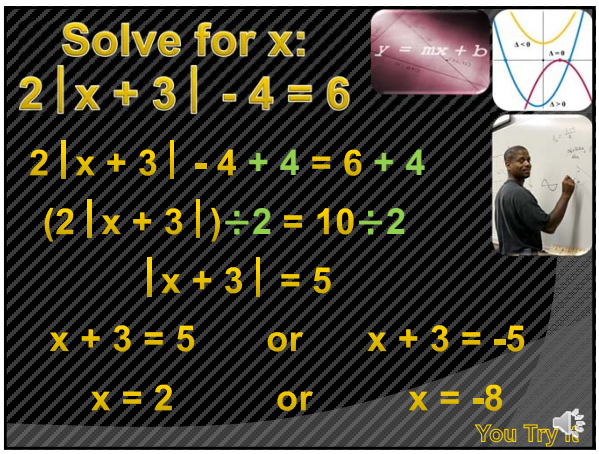

|5| = 5 |-5| = 5
|x| = 5
x = 5, or x = -5
|x - 4| = 6
x - 4 = 6 or x - 4 = -6
x = 10 or x = -2
Solve Absolute Value Equations

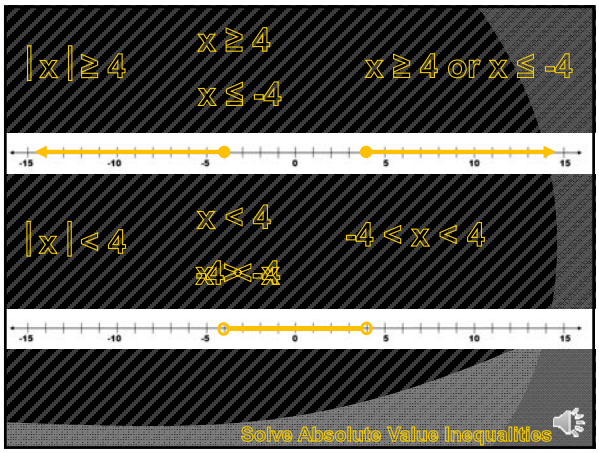

Solve for x:
|x - 1| = 2
y = mx + b
You Try It

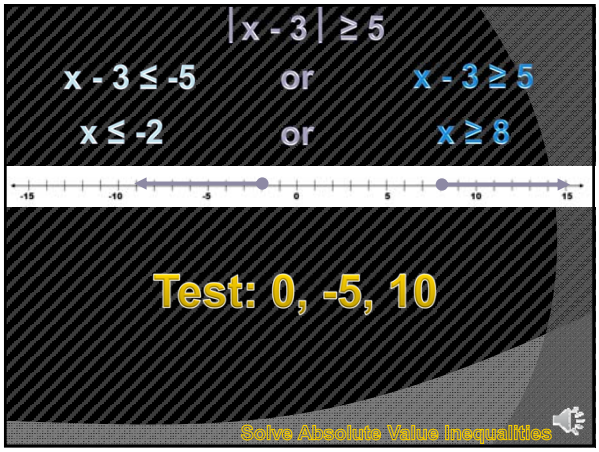

Solve for x:
|x - 1| = 2
y = mx + b
x - 1 = 2 or x - 1 = -2
x = 3 or x = -1
You Try It

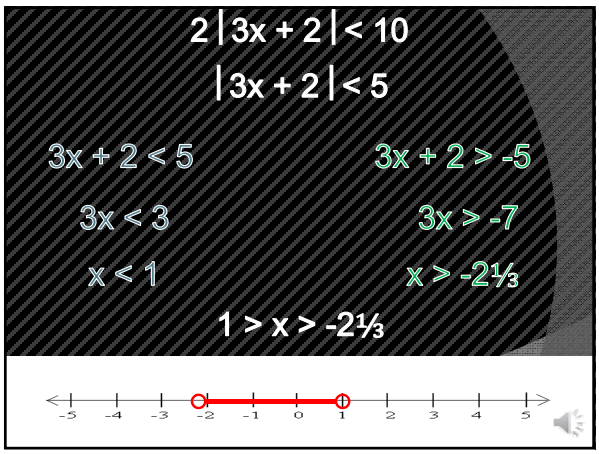

4|x - 2| - 3 = 5
4|x - 2| = 8
|x - 2| = 2
x – 2 = 2 or x – 2 = -2
x = 4 or x = 0
Solve Absolute Value Equations

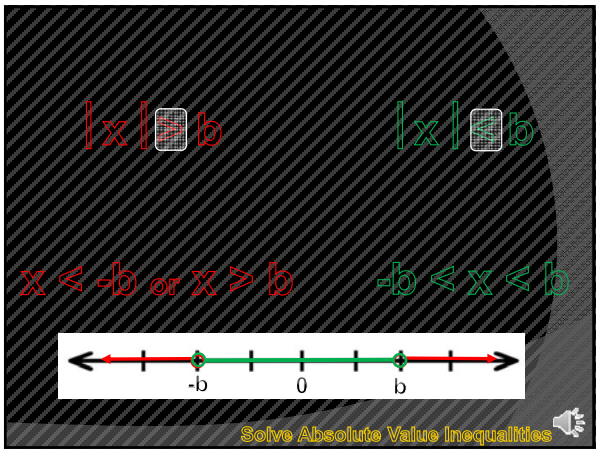

y = mx + b
Solve for x:
2|x + 3| - 4 = 6
You Try It

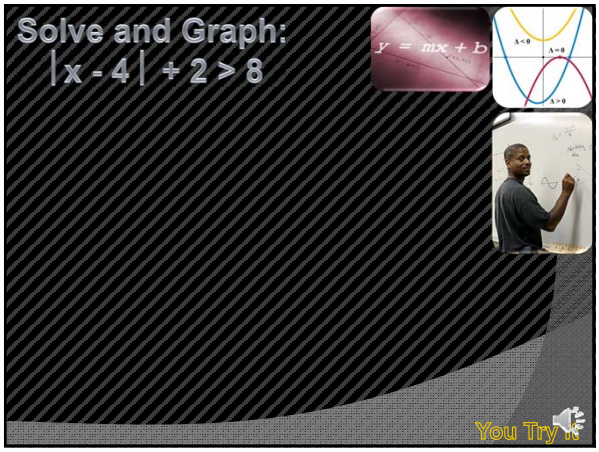

Solve for x:
2|x + 3| - 4 = 6
y = mx + b
2|x + 3| - 4 + 4 = 6 + 4
(2|x + 3|)÷2 = 10÷2
|x + 3| = 5
x + 3 = 5 or x + 3 = -5
x = 2 or x = -8
You Try It

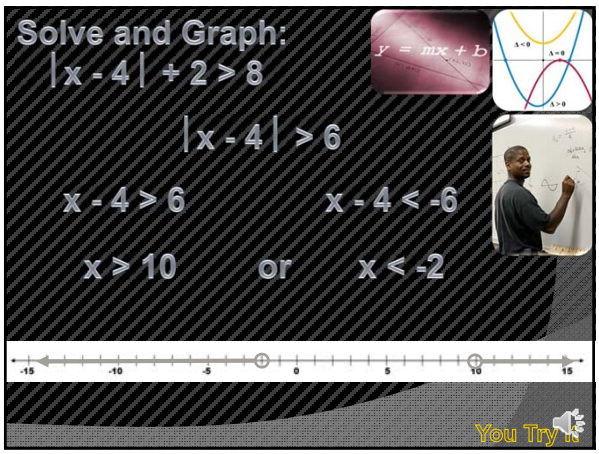

|x| ≥ 4
x ≥ 4
x ≤ -4
x ≥ 4 or x ≤ -4
|x| < 4
x < 4
x > -4
-4 < x < 4
Solve Absolute Value Inequalities


|x - 3| ≥ 5
x - 3 ≤ -5
or
x - 3 ≥ 5
x ≤ -2
or
x ≥ 8
Test: 0, -5, 10
Solve Absolute Value Inequalities


2|3x + 2| < 10
|3x + 2| < 5
3x + 2 < 5
3x < 3
x < 1
3x + 2 > -5
3x > -7
x > -2⅓
1 > x > -2⅓


|x| < b
|x| > b
x < -b or x > b
-b < x < b
-b
0
b
Solve Absolute Value Inequalities


Solve and Graph:
|x - 4| + 2 > 8
y = mx + b
You Try It


Solve and Graph:
|x - 4| + 2 > 8
|x - 4| > 6
x - 4 > 6
x - 4 < -6
x > 10
or
x < -2
-15
-10
-5
0
5
10
15
You Try It