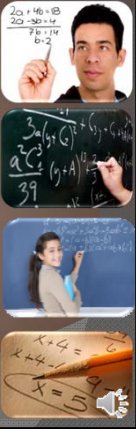
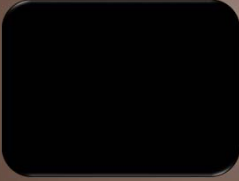


Algebra 1

The Pythagorean Theorem



$$\frac{2a + 16 = 10}{2a + 16 = 10}$$
$$\frac{2a + 16 = 10}{2a + 16 = 10}$$
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$$\frac{2a + 16 = 10}{2a + 16 = 10}$$


$$3x + 2y = 6$$
$$2x + y = 4$$
$$39$$

$$x + 4 = 6$$
$$x + 4 = 4$$
$$x = 5$$

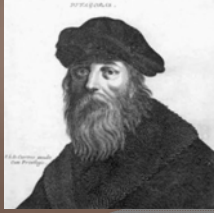


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Hypotenuse

The Pythagorean Theorem



Overview



The Pythagorean Theorem

The square of the hypotenuse equals the sum of the squares of the other two sides.

$a^2 + b^2 = c^2$

The Pythagorean Theorem

$c^2 = a^2 + b^2$
 $x^2 = 15^2 + 6^2$
 $x^2 = 225 + 36$
 $x^2 = 261$
 $x = \sqrt{261}$
 $x \approx 16.16$

$16^2 = 256$
 $17^2 = 289$
 $x \approx 16.2$

The Pythagorean Theorem

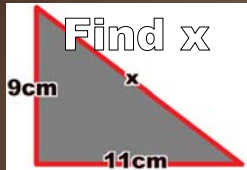
Find x

$y = mx + b$

$\Delta < 0$
 $\Delta = 0$
 $\Delta > 0$

You Try It

Find x




9cm x
11cm

$a^2 + b^2 = c^2$

$x^2 = 11^2 + 9^2$
 $x^2 = 121 + 81$
 $x^2 = 202$
 $x = \sqrt{202}$
 $x \approx 14.21 \text{ CM}$

y = mx + b $\Delta < 0$ $\Delta = 0$ $\Delta > 0$



You Try It

Find x



8 cm

$a^2 + b^2 = c^2$


$x^2 + 8^2 = 9.43^2$
 $x^2 + 64 = 88.92$
 $x^2 = 24.92$
 $x = \sqrt{24.92}$
 $x \approx 5 \text{ cm}$

y = mx + b $\Delta < 0$ $\Delta = 0$ $\Delta > 0$



You Try It

Find x




8 cm

$a^2 + b^2 = c^2$

$x^2 + 8^2 = 9.43^2$
 $x^2 + 64 = 88.92$
 $x^2 = 24.92$
 $x = \sqrt{24.92}$
 $x \approx 5 \text{ cm}$

y = mx + b $\Delta < 0$ $\Delta = 0$ $\Delta > 0$



You Try It

Find x

Area = 50 sq in

$y = mx + b$

$\Delta < 0$ $\Delta = 0$ $\Delta > 0$

You Try It

Find x

Area = 50 sq in

$A = .5 * b * h$ $5^2 + 10^2 = x^2$

$50 = .5 * b * 5$ $25 + 100 = x^2$

$20 = b$ $125 = x^2$

$11.18'' \approx x$

$y = mx + b$

$\Delta < 0$ $\Delta = 0$ $\Delta > 0$

You Try It

Find x

$\sqrt{10}$

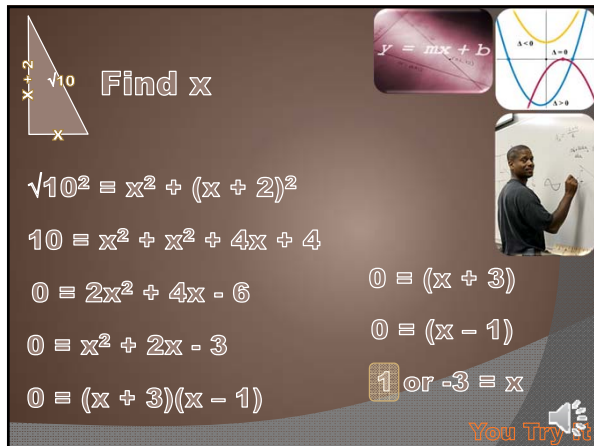
$x + 2$

x

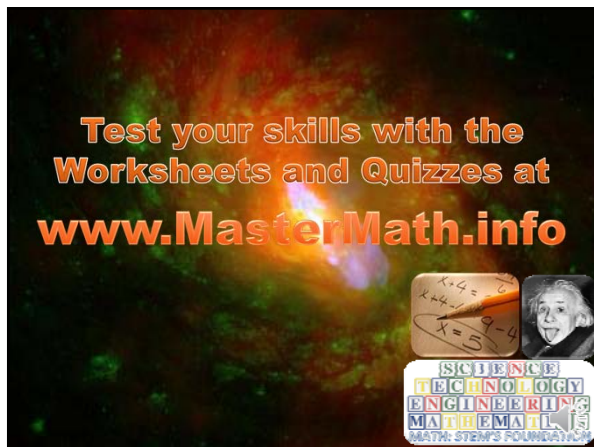
$y = mx + b$

$\Delta < 0$ $\Delta = 0$ $\Delta > 0$

You Try It



A slide with a dark background. On the left, a right-angled triangle has a vertical leg of length $x+2$, a horizontal leg of length x , and a hypotenuse of length $\sqrt{10}$. The text "Find x" is next to it. To the right, there are three small images: a purple box with the equation $y = mx + b$, a graph of a parabola with labels $\Delta < 0$, $\Delta = 0$, and $\Delta > 0$, and a photo of a man pointing at a whiteboard. Below these are several equations:
 $\sqrt{10^2} = x^2 + (x + 2)^2$
 $10 = x^2 + x^2 + 4x + 4$
 $0 = 2x^2 + 4x - 6$
 $0 = x^2 + 2x - 3$
 $0 = (x + 3)(x - 1)$
On the right side of the equations, there are two more equations:
 $0 = (x + 3)$
 $0 = (x - 1)$
Below these, it says "1 or -3 = x". At the bottom right, there is a "You Try It" logo with a hand icon.



A vertical advertisement with a colorful, abstract background. The text "Test your skills with the Worksheets and Quizzes at www.MasterMath.info" is written in orange and white. At the bottom, there are three small images: a whiteboard with the equations $x+4=0$, $x+4=0$, and $x=5$; a photo of Albert Einstein; and a logo for "SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS" with "MATH: STRONG FOUNDATION" below it.
