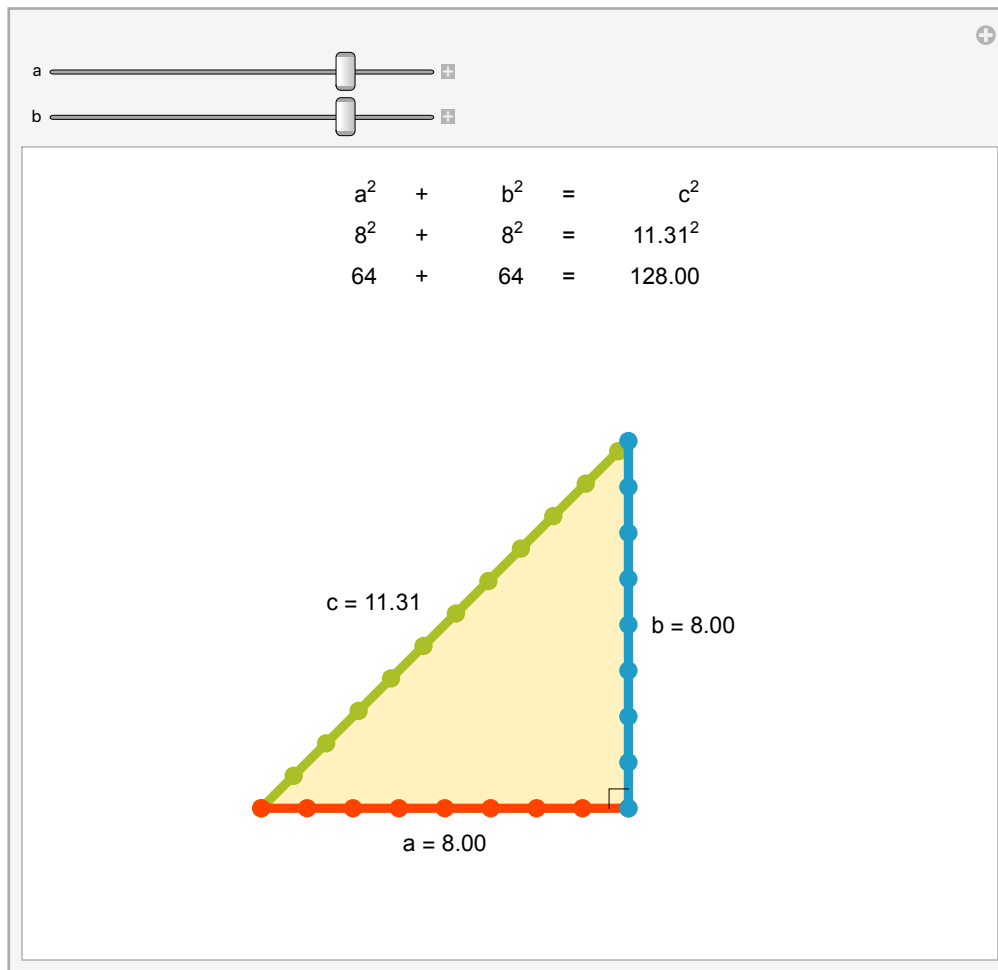


Pythagorean Theorem

```

Manipulate[
  Labeled[
    Graphics[
      {
        RGBColor[1, .95, .75], Polygon[{{0, 0}, {a, 0}, {a, b}}], Thickness[.01],
        PointSize[.02], RGBColor[.67, .75, .15], Line[{{0, 0}, {a, b}}],
        Point[Table[k / Sqrt[a^2 + b^2] {a, b}, {k, 0, Floor[Sqrt[a^2 + b^2]]}],
        RGBColor[1, .26, 0], Line[{{0, 0}, {a, 0}}], Point[Table[{i, 0}, {i, 0, a}]],
        RGBColor[.12, .61, .78], Line[{{a, 0}, {a, b}}],
        Point[Table[{a, j}, {j, 0, b}]], Black, Thickness[.005],
        Inset[Graphics@Line[{{0, 0}, {0, .8}, {.8, .8}}, {a, 0}, {.8, 0}, {.5, .5}],
        Text[Style["a = " <> ToString[NumberForm[N[a], {4, 2},
          NumberPadding -> {"", "0"}]], 12], {a / 2, -.75}], Text[Style[
        "b = " <> ToString[NumberForm[N[b], {4, 2}, NumberPadding -> {"", "0"}]], 12],
        {a + .5, b / 2}, {-1, 0}], Text[Style["c = " <> ToString[
        NumberForm[N[Sqrt[a^2 + b^2]], {5, 2}, NumberPadding -> {"", "0"}]], 12],
        {a / 2 - .5, b / 2 + .5}, {1, 0}]], ImageSize -> {478, 335}, Axes -> False,
        PlotRange -> {{-5, 15}, {-2, 10.5}}, AspectRatio -> Automatic],
        TraditionalForm@Text@Style[Grid[{{"a^2", "+", "b^2", "=", "c^2"}, {Superscript[
        NumberForm[a, {4, 2}, NumberPadding -> {"", "0"}], 2], "+", Superscript[
        NumberForm[b, {4, 2}, NumberPadding -> {"", "0"}], 2], "=", Superscript[
        NumberForm[N[Sqrt[a^2 + b^2]], {5, 2}, NumberPadding -> {"", "0"}], 2}},
        {NumberForm[a^2, {4, 2}, NumberPadding -> {"", "0"}], "+",
        NumberForm[b^2, {4, 2}, NumberPadding -> {"", "0"}], "=",
        NumberForm[N[a^2 + b^2], {5, 2}, NumberPadding -> {"", "0"}]}],
        Alignment -> {Right, Baseline}, ItemSize -> {{5, 2.2, 4.5, 2.2, 6}, 1.5}], 12],
        Top], {{a, 8, "a"}, .01, 10}, {{b, 8, "b"},
        .01,
        10}]

```



THIS NOTEBOOK IS THE SOURCE CODE FROM

"Pythagorean Theorem" from The Wolfram Demonstrations Project
<http://demonstrations.wolfram.com/PythagoreanTheorem/>

■ Contributed by: Jeff Bryant

A full-function Wolfram *Mathematica* 6 system is required to edit or run this notebook.
 (*Mathematica Player* runs only Demonstrations published on this site.)

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