Solve:

$x^2 + 10x - 10 = 16x + 6$

$x^2 + 10x - 16x - 10 - 6 = 0$

$x^2 - 6x - 16 = 0$

$(x + 2)(x - 8) = 0$

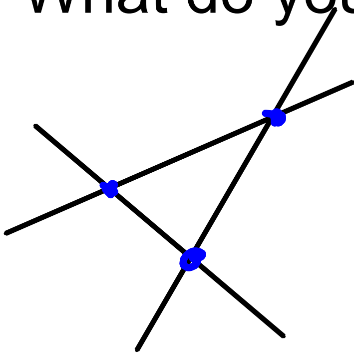
$x + 2 = 0$

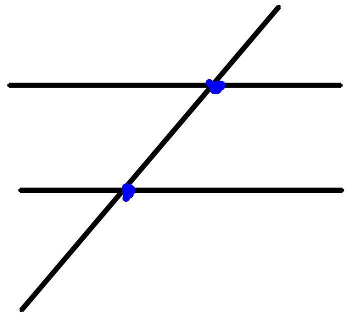
$x = -2$

$x = -2$

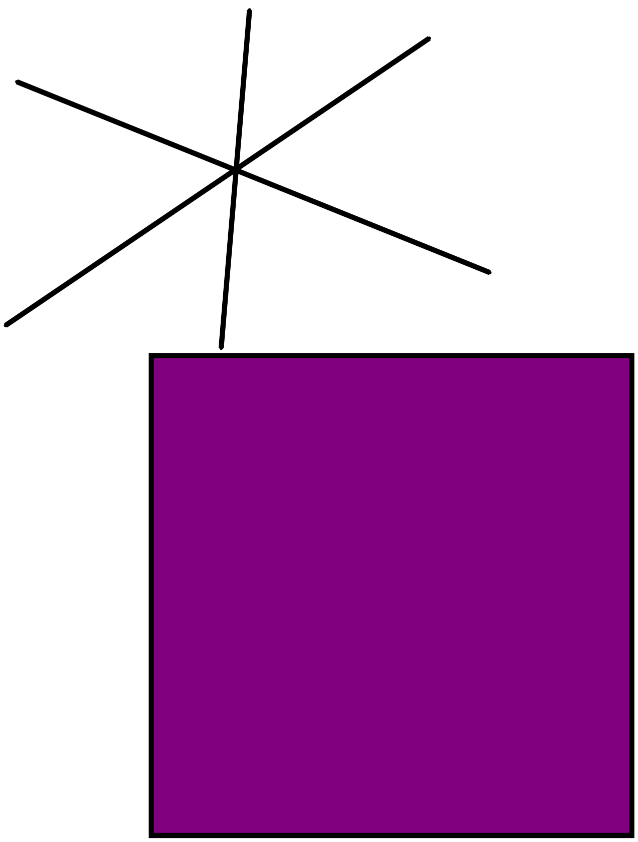
$x = 8$

What do you notice?





Not concurrent



Concurrent

when a set of lines has a point in common

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Investigation 3.8 on Geometer's Sketchpad

Angle Bisector Concurrency Conjecture: The three angle bisectors of a triangle meet at a point (are concurrent). [redacted]

Incenter: the point at which 3 angle bisectors of a triangle intersect.

Incenter Conjecture: the incenter is equidistant from the sides of a triangle

Possible locations of Incenter:

[redacted]

Perpendicular Bisector Concurrency Conjecture: The three perpendicular bisectors of a triangle are concurrent. [redacted]

Circumcenter: the point at which 3 perpendicular bisectors of a triangle meet

Circumcenter Conjecture: the circumcenter is equidistant from the vertices of a triangle

Possible locations of circumcenter: [redacted]

Altitude Concurrency Conjecture: the three altitudes of a triangle [redacted]

Orthocenter: [redacted]

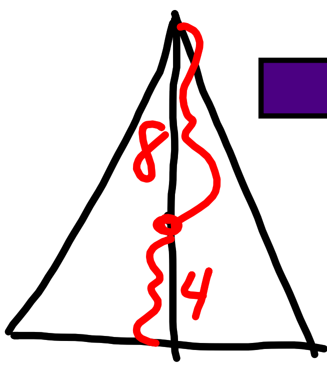
Possible locations of orthocenter:

Investigation 3.9 on Geometer's Sketchpad

Median Concurrency Conjecture: The three medians of a triangle are concurrent.

Centroid: The point of concurrency of the medians of a triangle

Centroid Conjecture: The centroid of a triangle divides each median into two parts so that the distance from the centroid to the vertex is **twice** the distance from the centroid to the midpoint on the opposite side.



Homework:

-Draw 4 acute triangles. In one triangle construct a circumcenter. In the second one, construct an incenter. In the third one, construct an orthocenter. In the last one, construct a centroid

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