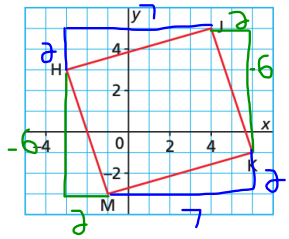
Nov 19-8:59 AM

Page 350 Question #13

HJKM is a quadrilateral.



Find Slopes

$m_{KJ} = m_{MH} = \frac{-6}{2} = -3$

$m_{MK} = m_{HJ} = \frac{2}{7}$

a) Is HJKM a parallelogram? Justify your answer.

Yes, because opposite sides of the quadrilateral are parallel lines based on the slopes we calculated

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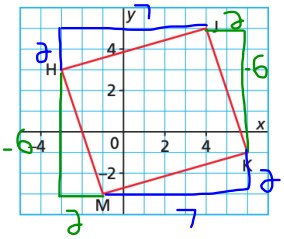

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b) Is HJKM a rectangle? Justify your answer.

$m_{KJ} = \frac{-3}{1}$ $m_{MK} = \frac{2}{7}$

No, because the lines don't cross at 90 degree angles

NOT Negative Reciprocals

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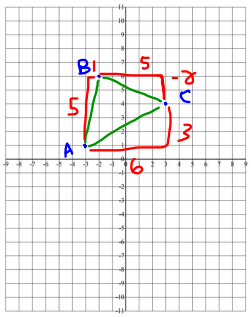
NOT Negative Reciprocals

Page 350 Question #16 The coordinates of the vertices of △ABC are A(−3, 1), B(6, −2), and C(3, 4). How can you tell that △ABC is a right triangle?



Plot points, Find Slopes

$M_{BC} = \frac{-3}{5}$

$M_{AC} = \frac{3}{6} = \frac{1}{2}$

$M_{AB} = \frac{5}{1}$

Right Angle = 90 degrees

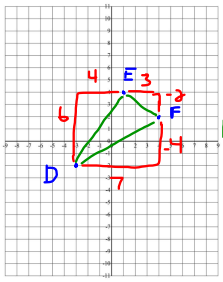
Which means the lines would be perpendicular.

So are any of the slopes negative reciprocals of each other?

No Negative Reciprocals

No lines are perpendicular to each other so no right angles. Therefore, not a right angle triangle.

Page 350 Question #17 The coordinates of the vertices of △DEF are D(−3, −2), E(1, 4), and F(4, 2). Is △DEF a right triangle? Justify your answer.



Plot points, Find Slopes

$M_{DE} = \frac{6}{4} = \frac{3}{2}$

$M_{EF} = \frac{3}{-3}$

$M_{DF} = \frac{-4}{7}$

Right Angle = 90 degrees

Which means the lines would be perpendicular.

So are any of the slopes negative reciprocals of each other?

$M_{EF} = \frac{-3}{3}$ $M_{DE} = \frac{3}{3}$ $M_1 \times M_2$ $\frac{-3}{3} \times \frac{3}{3} = \frac{-6}{6} = -1$

Yes lines EF and DE are perpendicular to each other so there is a right angle. Therefore, a right angle triangle.