

## Study Guide for Level 7 Test

All the answers are in your heart. Wait, that's wrong - I mean notes. The answers are in your notes.

The equation of a line is  $3y + 2x = 12$ . What is the slope of the line perpendicular to the given line?

- 1)  $\frac{2}{3}$
- 2)  $\frac{3}{2}$
- 3)  $-\frac{2}{3}$
- 4)  $-\frac{3}{2}$

The lines whose equations are  $2x + 3y = 4$  and  $y = mx + 6$  will be perpendicular when  $m$  is

- 1)  $-\frac{3}{2}$
- 2)  $-\frac{2}{3}$
- 3)  $\frac{3}{2}$
- 4)  $\frac{2}{3}$

Easy

Which equation represents a line that is perpendicular to the line represented by  $2x - y = 7$ ?

- 1)  $y = -\frac{1}{2}x + 6$
- 2)  $y = \frac{1}{2}x + 6$
- 3)  $y = -2x + 6$
- 4)  $y = 2x + 6$

Determine if the two lines  $2x - 9y = -18$

and  $y = \frac{2}{9}x - 3$  are *parallel*, *perpendicular*, or *neither*.

Medium

Which equation represents a line that is parallel to the line whose equation is  $2x + 3y = 12$ ?

- 1)  $6y - 4x = 2$
- 2)  $6y + 4x = 2$
- 3)  $4x - 6y = 2$
- 4)  $6x + 4y = -2$

The equation of a line is  $y = \frac{2}{3}x + 5$ . What is an equation of the line that is perpendicular to the given line and that passes through the point  $(-2, 3)$ ?

Hard

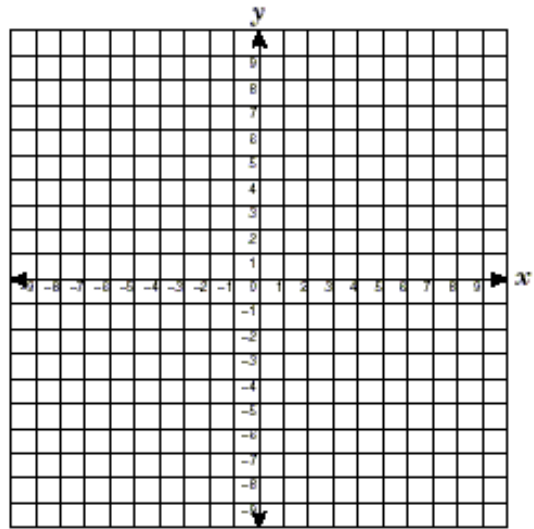
Write the standard form of the equation of the line passing through the point  $(1, 5)$  and perpendicular to the line  $4x - 7y = -28$ .

- [A]  $7x + 4y = 27$     [B]  $-7x - 4y = 27$   
 [C]  $4x + 7y = 39$     [D]  $4x - 7y = -39$

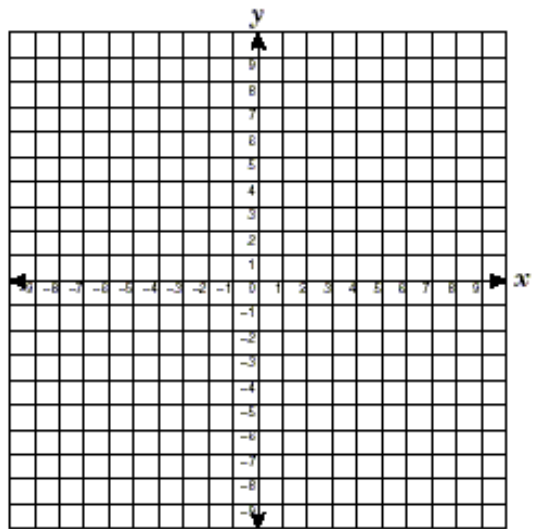
Give the slope-intercept form of the equation of the line that is parallel to  $8x + 5y = -7$  and contains  $(5, 3)$ .

Mastery level

The line  $3x - 4y = 8$  is dilated by a scale factor of 1.5 centered at the origin. Write the equation of the line after the dilation

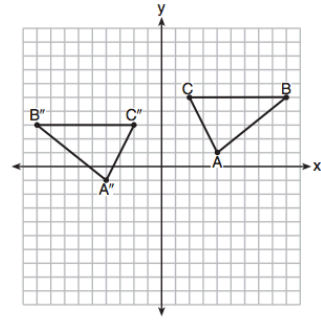


The line  $x - 2y = 4$  is dilated by a scale factor of 2 centered at point  $(2, 1)$ . Write the equation of the line after the dilation



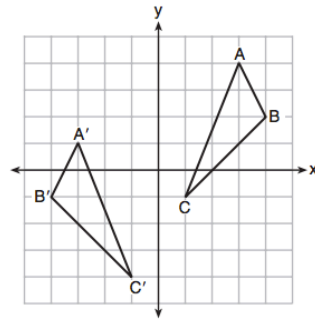
# Level 1 Review

The graph below shows  $\triangle ABC$  and its image,  $\triangle A''B''C''$ .



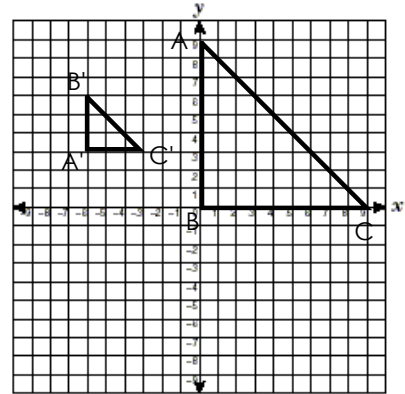
Describe a sequence of rigid motions which would map  $\triangle ABC$  onto  $\triangle A''B''C''$ .

As graphed on the set of axes below,  $\triangle A'B'C'$  is the image of  $\triangle ABC$  after a sequence of transformations.

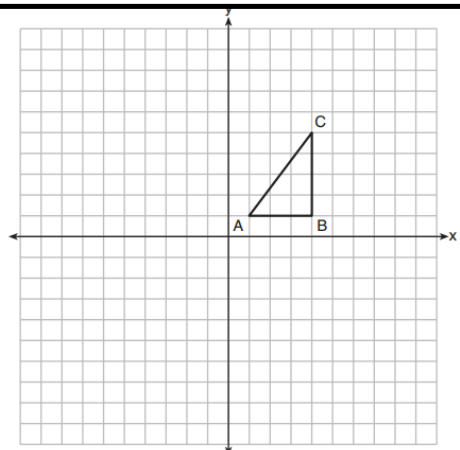


Is  $\triangle A'B'C'$  congruent to  $\triangle ABC$ ? Use the properties of rigid motion to explain your answer.

Describe a transformation that maps  $\triangle ABC$  onto  $\triangle A'B'C'$ .



In the diagram below,  $\triangle ABC$  has coordinates  $A(1,1)$ ,  $B(4,1)$ , and  $C(4,5)$ . Graph and label  $\triangle A''B''C''$ , the image of  $\triangle ABC$  after the translation five units to the right and two units up followed by the reflection over the line  $y = 0$ .



## Level 2 Review

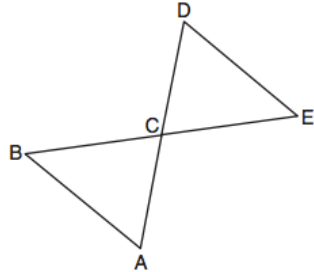
Given:  $\overline{BE}$  and  $\overline{AD}$  intersect at point  $C$

$$\overline{BC} \cong \overline{EC}$$

$$\overline{AC} \cong \overline{DC}$$

$\overline{AB}$  and  $\overline{DE}$  are drawn

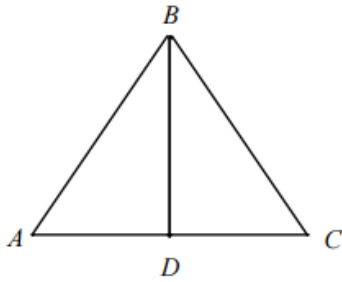
Prove:  $\triangle ABC \cong \triangle DEC$



Given:  $\overline{BD}$  is the median to  $\overline{AC}$ ,

$$\overline{AB} \cong \overline{BC}$$

Prove:  $\angle CBD \cong \angle ABD$



Given:  $\overline{AD}$  bisects  $\angle BAC$

$\overline{AD}$  is an altitude

Prove:  $\triangle ABC \cong \triangle ADC$

