BECA/Huson/Geometry: Construction   First and last name:
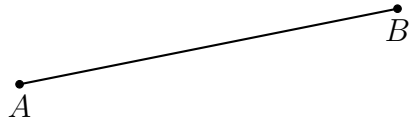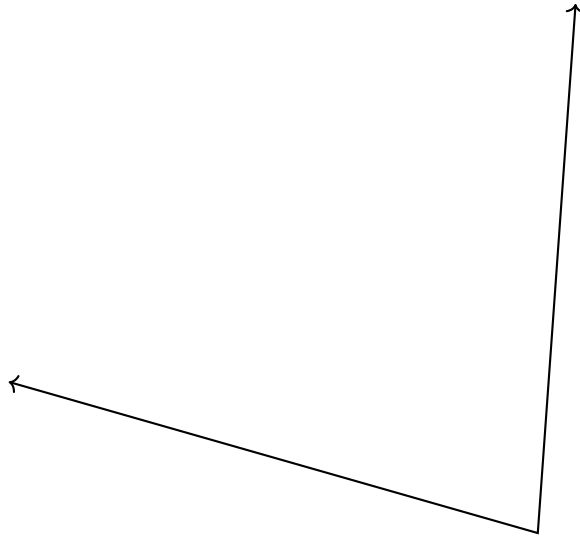10 October 2024   Section:

1.23 Midterm Exam: Constructions & transformations

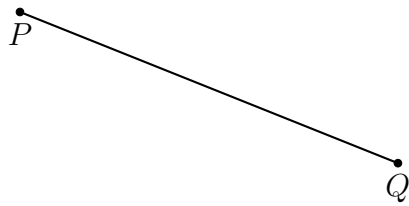1. Construct an equilateral triangle with one side $\overline{AB}$.

B

A

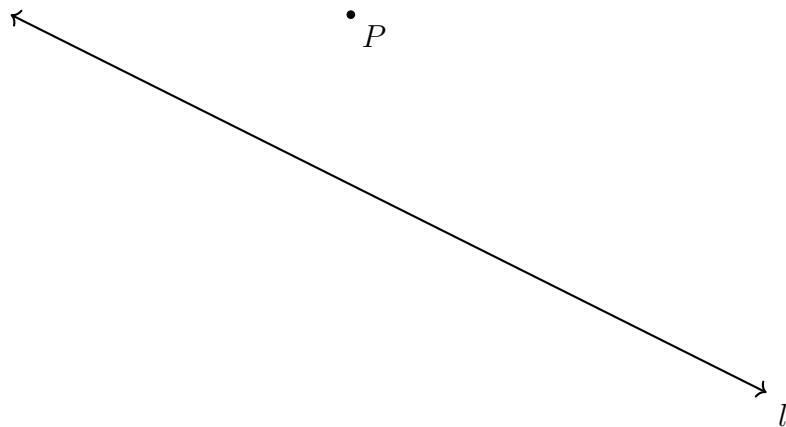2. Construct an angle bisector of the given angle.

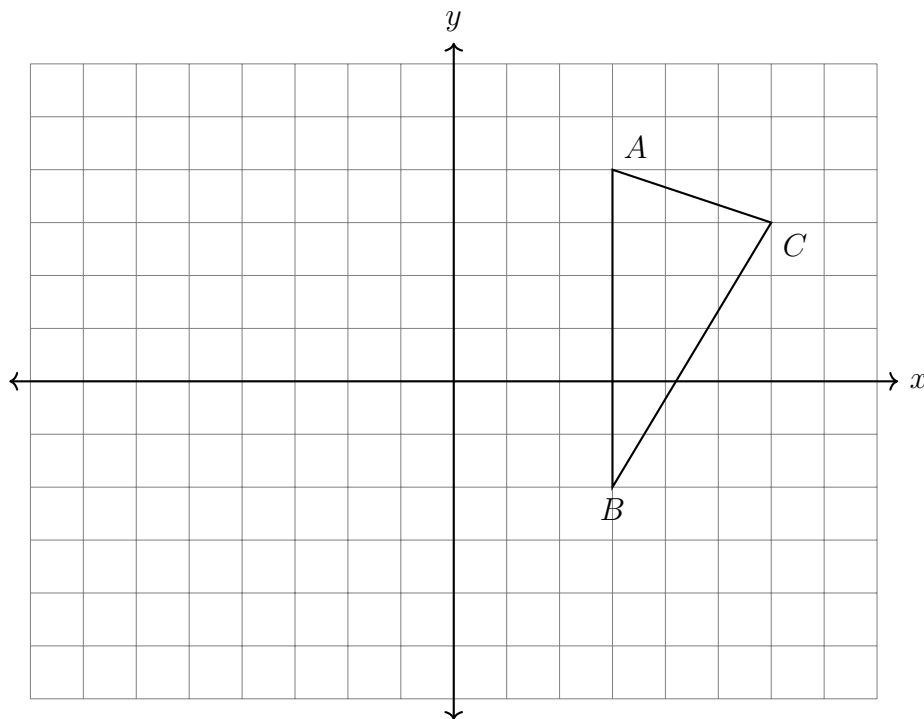3. Construct a perpendicular bisector of $\overline{PQ}$.

P

Q

4. Construct a perpendicular to line l through the point P.

P

l

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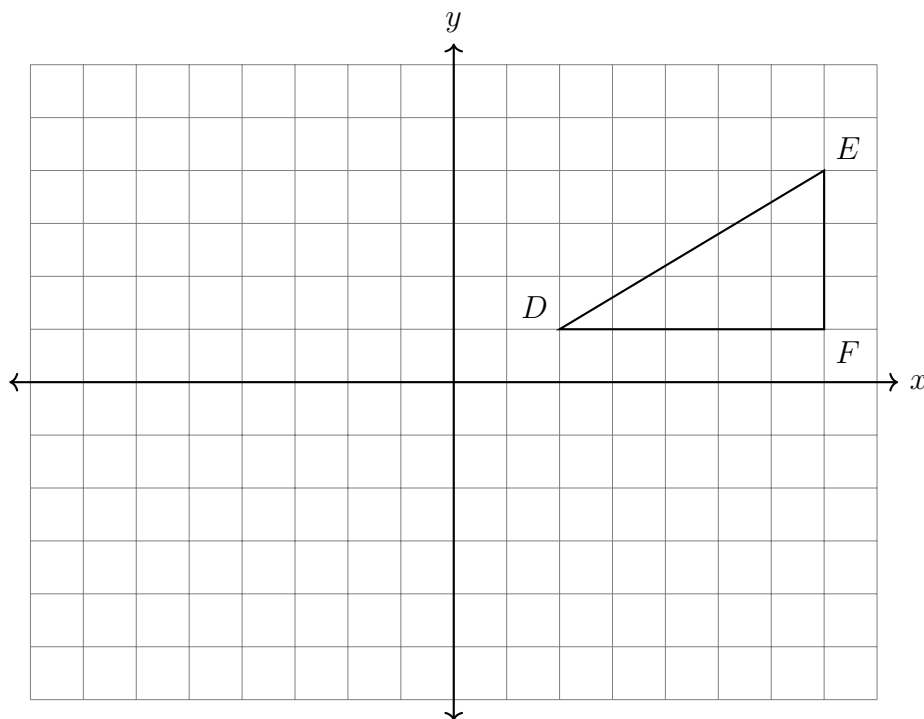10 October 2024   Section:

1.23 Midterm Exam: Transformations

5. Translate $\triangle ABC$ left five and down three units. Label the image $\triangle A'B'C'$.

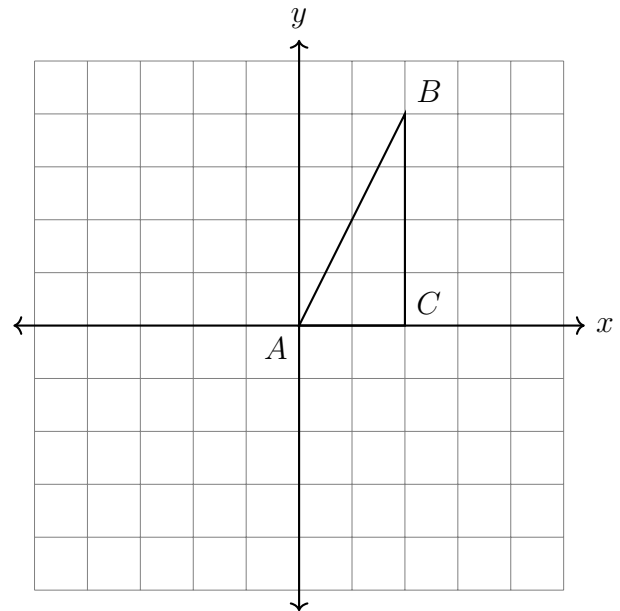6. Reflect $\triangle DEF$ across the x-axis, labeling the image $\triangle D'E'F'$.

7. Rotate the triangle 90° clockwise around the origin, $\triangle ABC \to \triangle A'B'C'$. Complete the table of the coordinates and plot and label the image on the grid.

$A(0,0) \to$

$B(2,4) \to$

$C(2,0) \to$

8. Triangle $X'Y'Z'$ is the image of triangle XYZ after a translation. Which triangle is larger, or are they the same size? Justify your answer.

9. A reflection maps $P(-5,3)$ onto $P'(5,3)$. Is the reflection across the x-axis or the y-axis?

10. Specify the translation that maps $Q(-1,2) \to Q'(6,-5)$.

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11. Simplify the expression by combining like terms.

    (a) $2x + 4 - x + 11$ (c) $14 + 5\pi - 2\pi + 4$

    (b) $5y - 4 - 7y + y$ (d) $2a - 7a + 3\sqrt{5} + \sqrt{5}$

12. Use the function $f(x) = 5x - 10$ to answer the questions.

    (a) What is $f(3)$?   (c) What is x when $f(x) = 10$?

    (b) Find $f(-1)$