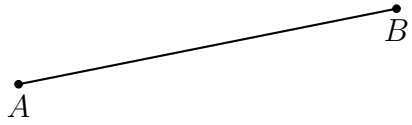
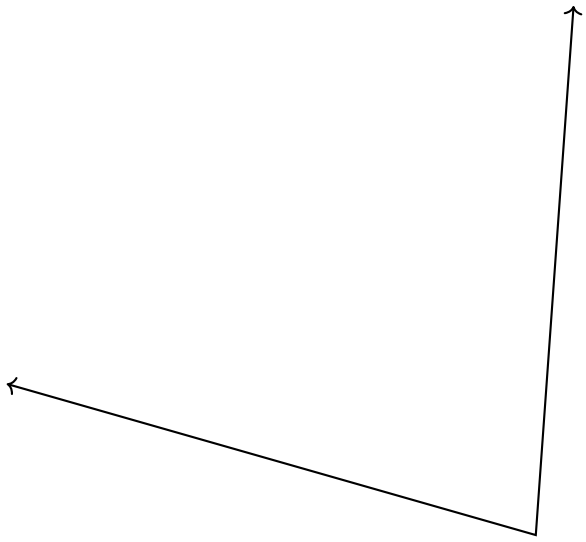
BECA/Huson/Geometry: Construction First and last name:
10 October 2024 Section:

1.23 Midterm Exam: Constructions & transformations

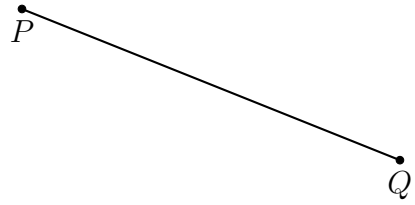
1. Construct an equilateral triangle with one side $\overline{AB}$.



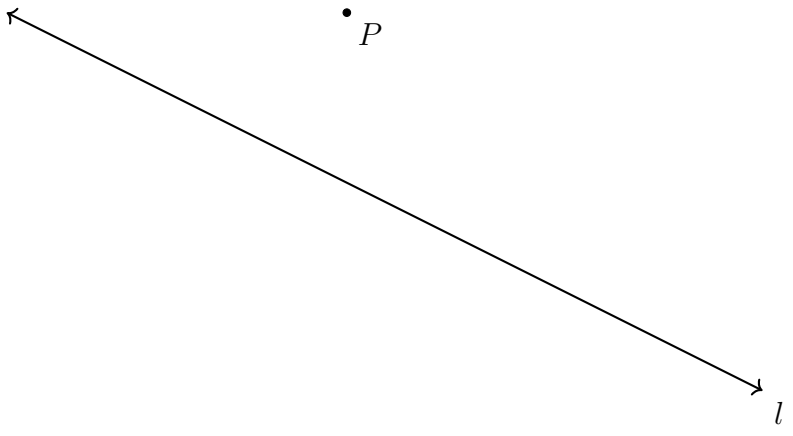
2. Construct an angle bisector of the given angle.



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



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



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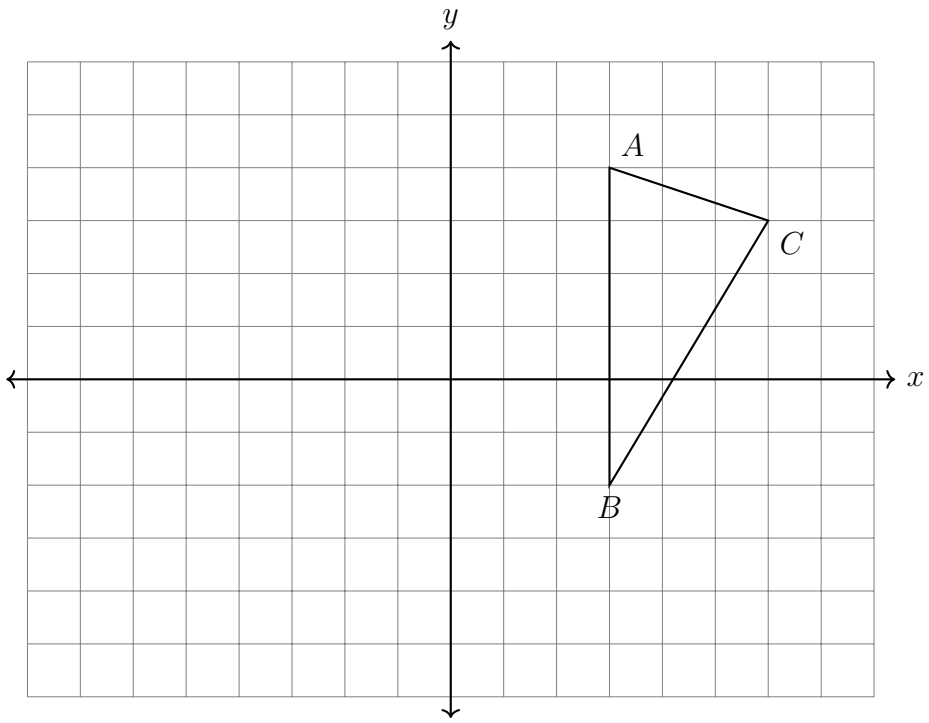
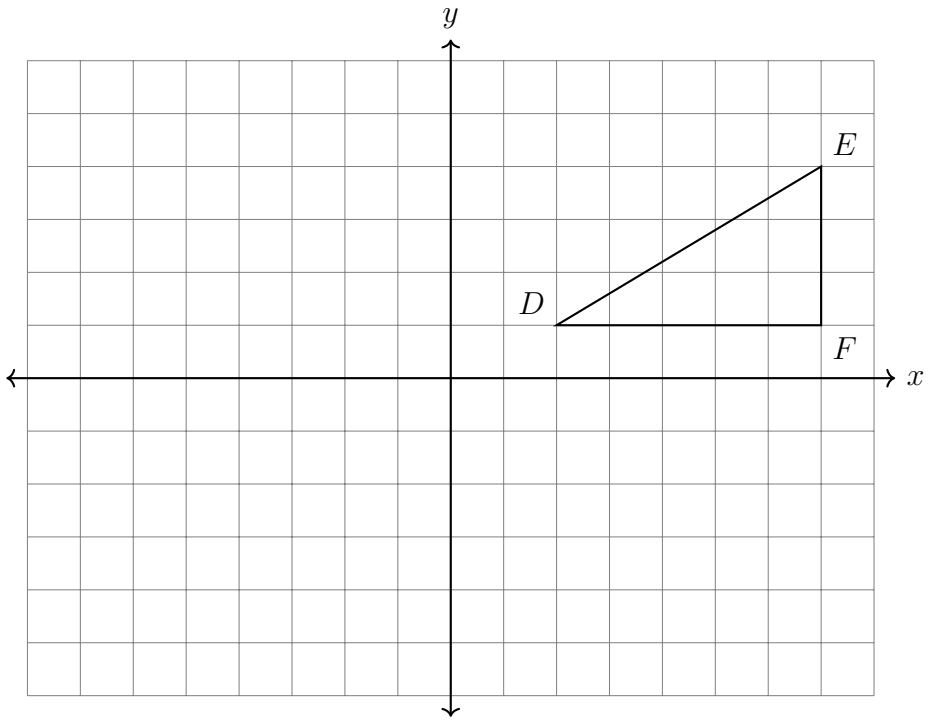
1.23 Midterm Exam: Transformations

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 $\triangle D'E'F'$.

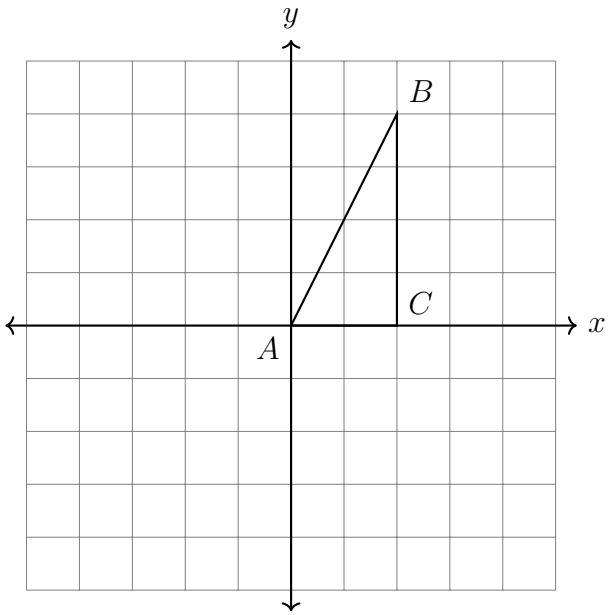


7. Rotate the triangle 90° clockwise around the origin, $\triangle ABC \to \triangle A'B'C'$. Complete the table of the coordinates and plot and label the image on the grid.

$A(0,0) \to$

$B(2,4) \to$

$C(2,0) \to$



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 each expression by combining like terms.

(a) $7x + 5 - 2x + 3$

(b) $-5y^2 - 4y + 8y + y^2$

(c) $5 + 5\pi + 7 - 3\pi$

(d) $12x - 7 + 4\sqrt{5} + 2\sqrt{5}$

12. Use the function $f(x) = 8x - 3$ to answer the questions.

(a) What is $f(0)$?

(b) Find $f(\frac{1}{4})$

(c) What is x when $f(x) = 69$?

13. Solve each equation for x. Then check your answer.

(a) $2x + 7x + 13 = 31$

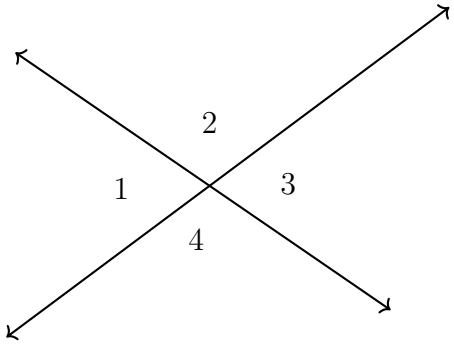
(b) $5x - 7 = 8x + 14$

14. As shown below, two lines intersect making four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$.

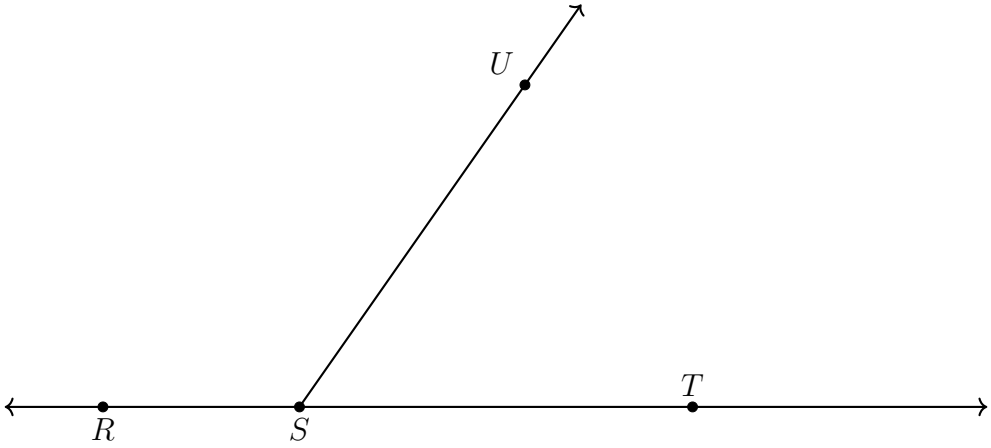
    Given $\text{m}\angle 1 = 70°$.

    (a) Find $\text{m}\angle 3$

    (b) Find $\text{m}\angle 4$



15. Given that the $m\angle UST = 55°$. Find the $m\angle RSU$



16. Given two parallel lines, two transversals, and angle measures as marked.

    Find x, y, z