

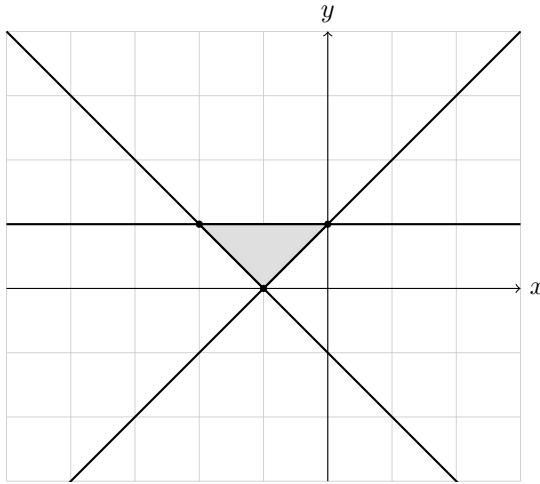
PLOT LINES → FIND AREA

Math 10 · Mr. Merrick · January 14, 2026

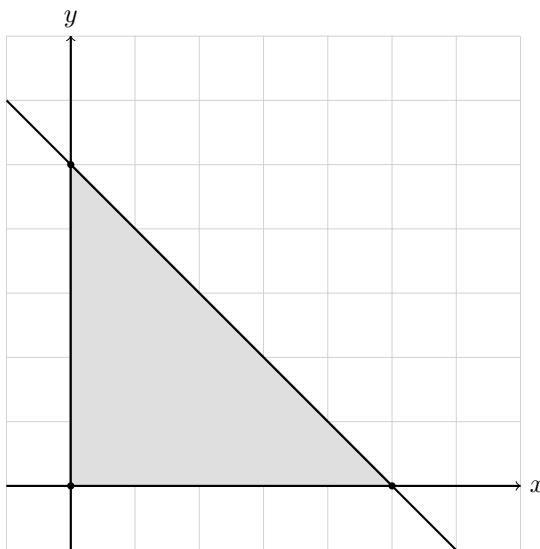
For each question:

- Plot all given lines on the Cartesian plane.
- Identify the enclosed region.
- Find the area. (Use horizontal bases and vertical heights.)

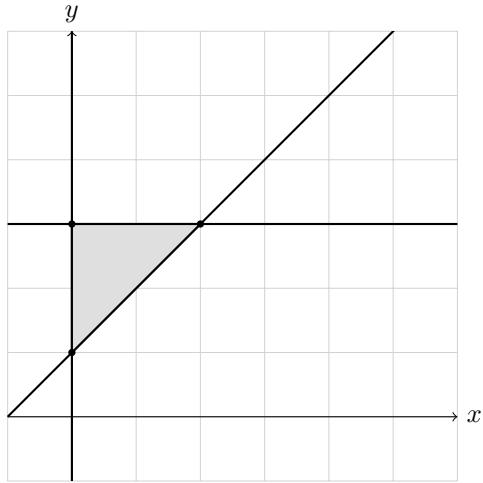
1. Plot $y = 1$, $y = x + 1$, and $y = -x - 1$. Find the area of the region they enclose. [Intersections: $(-2, 1)$, $(0, 1)$, $(-1, 0)$. Base on $y = 1$: 2. Height: 1. Area = $\frac{1}{2}(2)(1) = 1$.]



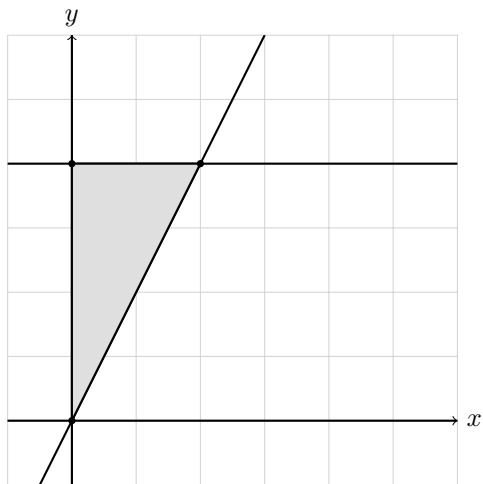
2. Plot $x = 0$, $y = 0$, and $y = -x + 5$. Find the area of the region they enclose. [Vertices: $(0, 0)$, $(0, 5)$, $(5, 0)$. Base = 5, height = 5. Area = $\frac{1}{2}(5)(5) = 12.5$.]



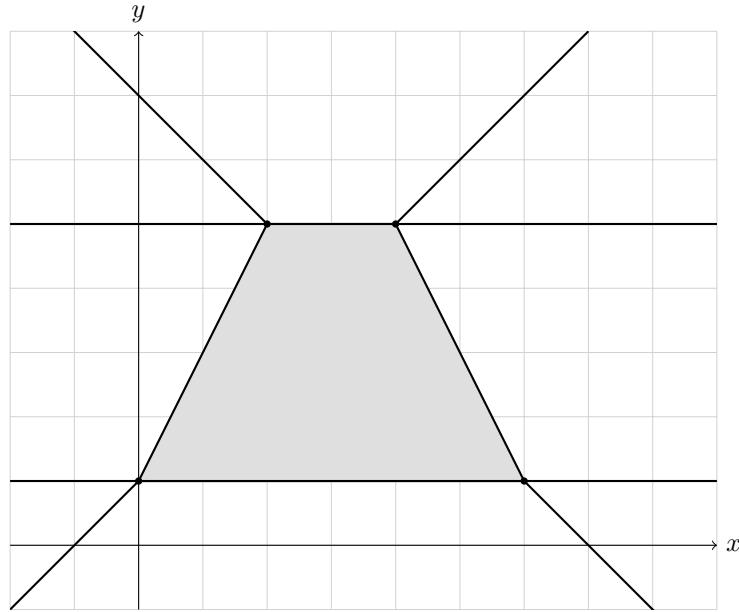
3. Plot $x = 0$, $y = 3$, and $y = x + 1$. Find the area of the region they enclose. [Vertices: $(0, 1)$, $(0, 3)$, $(2, 3)$.
Base on $y = 3$: 2. Height: 2. Area = $\frac{1}{2}(2)(2) = 2.$]



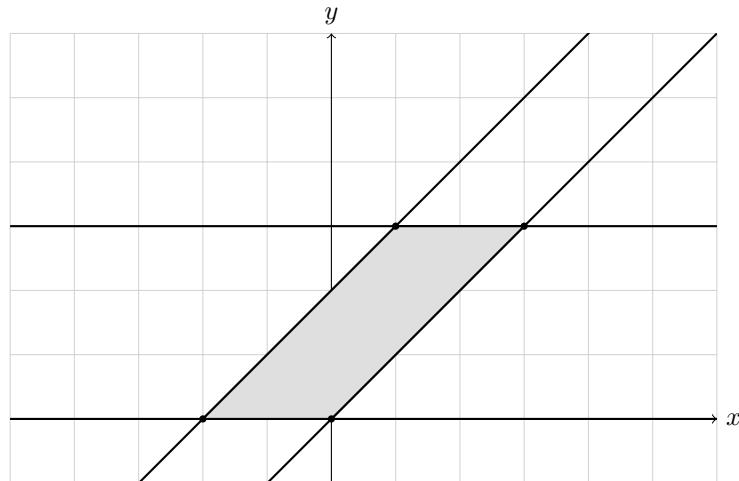
4. Plot $x = 0$, $y = 0$, $y = 4$, and $y = 2x$. Find the area of the region they enclose. [Vertices: $(0, 0)$, $(0, 4)$, $(2, 4)$. Base on $y = 4$: 2. Height: 4. Area = $\frac{1}{2}(2)(4) = 4.$]



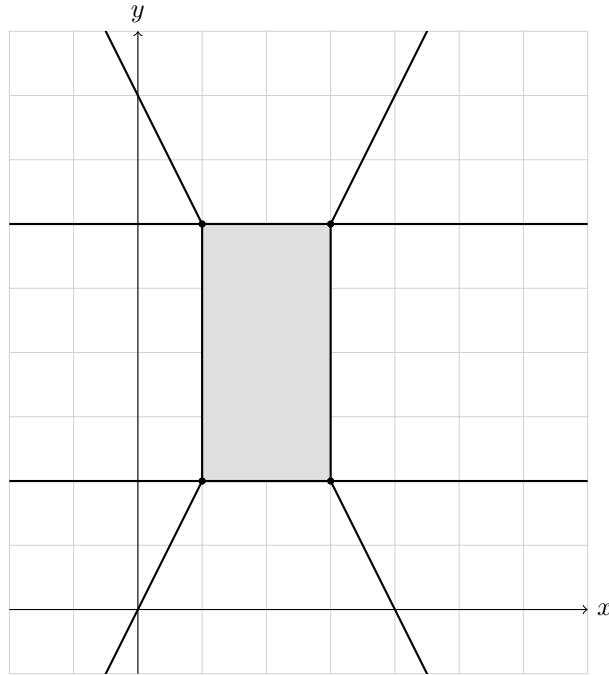
5. Plot $y = 1$, $y = 5$, $y = x + 1$, and $y = -x + 7$. Find the area of the region they enclose. [At $y = 5$: (2, 5), (4, 5). At $y = 1$: (0, 1), (6, 1). Bases: 2 and 6. Height = 4. Area = $\frac{1}{2}(2+6)(4) = 16$.]



6. Plot $y = 0$, $y = 3$, $y = x$, and $y = x + 2$. Find the area of the region they enclose. [At $y = 0$: points (0,0) and (-2,0). At $y = 3$: points (3,3) and (1,3). Bases: 2 and 2. Height = 3. Area = $\frac{1}{2}(2+2)(3) = 6$.]



7. Plot $y = 2$, $y = 6$, $y = 2x$, and $y = -2x + 8$. Find the area of the region they enclose. [At $y = 6$: (3, 6), (1, 6). At $y = 2$: (1, 2), (3, 2). Bases: 2 and 2. Height = 4. Area = $\frac{1}{2}(2+2)(4) = 8$.]



8. Plot $y = 1$, $y = 4$, $x = -1$, and $y = -x + 3$. Find the area of the region they enclose. [Triangle with vertices $(-1, 1)$, $(2, 1)$, $(-1, 4)$. Base = 3. Height = 3. Area = $\frac{1}{2}(3)(3) = 4.5$.]

