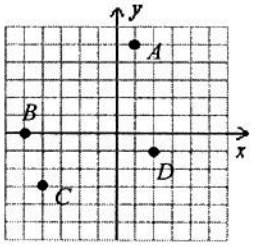
Transition to College Mathematics
Chapter 5 Final Exam Review

Name Key

1. Reflect A, B, C, and D through the origin and give the coordinates of the reflected points, A', B', C', and D'.



$A'(-1,-5)$ $B'(5,0)$

$C'(4,3)$ $D'(-2,1)$

2. Test the equation for symmetry with respect to the x-axis, the y-axis, and the origin.

$$x^2 - 6xy^2 = 5$$

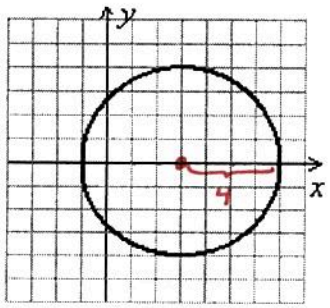
x-axis: $x^2 - 6x(-y)^2 = 5$ → $x^2 - 6xy^2 = 5$

y-axis: $(-x)^2 - 6(-x)y^2 = 5$ → $x^2 + 6xy^2 = 5$ ✗

origin: $(-x^2) - 6(-x)(-y)^2 = 5$ → $x^2 + 6xy^2 = 5$ ✗

∴ x-axis symmetry

3. Write the equation of the circle.



$(x-3)^2 + y^2 = 16$

4. Find the center and the radius of the circle.

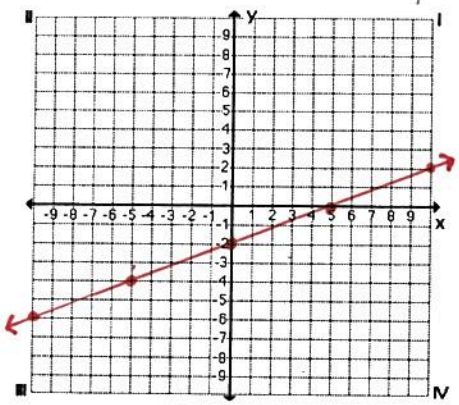
$$x^2 + y^2 - 6x + 4y - 3 = 0$$

$(x^2 - 6x + 9) + (y^2 + 4y + 4) = 3 + 9 + 4$

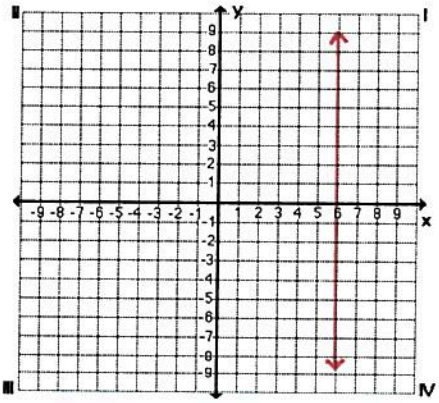
$(x-3)^2 + (y+2)^2 = 16$

$C: (3,-2)$ $r = 4$

5. Graph $2x - 5y = 10$. → $-5y = -2x + 10$, $y = \frac{2}{5}x - 2$



6. Graph $x = 6$. → vertical line → ϕ or No Slope



7. Write the equation of the line with slope $-\frac{1}{2}$ and y-intercept 3. Write the equation in standard form $Ax + By = C, A \geq 0$.

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

$2 \cdot \frac{1}{2}x + y = 3 \cdot 2$

$x + 2y = 6$

8. Write the equation of the line in slope-intercept form passing through (2, 5) and (4, –3).

$m = \frac{5+3}{2-4} = \frac{8}{-2} = -4$

$y - 5 = -4(x-2)$

$y - 5 = -4x + 8$

$y = -4x + 13$

9. Write the equation of the line passing through (-8,-3), and perpendicular to $y = \frac{1}{4}x + 2$. Write your answer in standard form $Ax + By = C, A \geq 0$.

$m = \frac{1}{4}$

$m_{\perp} = -4$

$y + 3 = -4(x+8)$

$y + 3 = -4x - 32$

$4x + y = -35$