College Algebra CHS

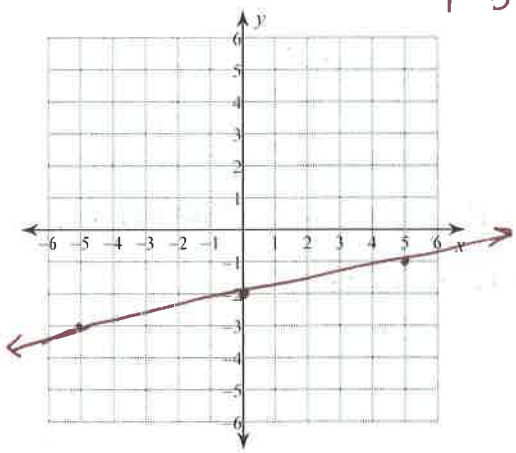
Name Key

Linear & Circle Equations/Graphs

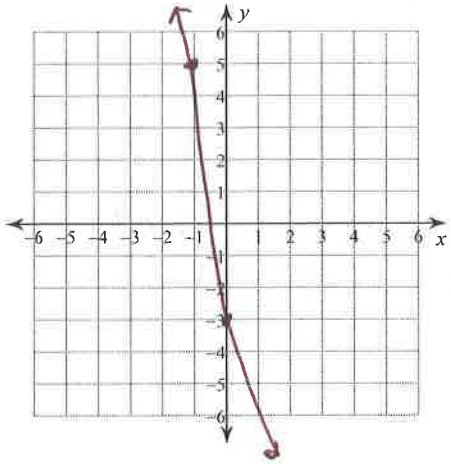
Date

Sketch the graph of each line.

1) $10 + 5y = x$ $5y = x - 10$ $y = \frac{1}{5}x - 2$



2) $3 = -y - 8x$ $y = -8x - 3$



Write the equation of a line in point-slope form and slope-intercept form that passes through the following points.

3) $(-2, 4)\ (1, 10)$ point-slope $y - 4 = 2(x + 2)$ OR

2 point-slope $y - 10 = 2(x - 1)$

$y - 10 = 2x - 2$

slope-intercept $y = 2x + 8$

4) $(-4, 8)\ (-1, -20)$ point-slope $y + 20 = \frac{-28}{3}(x + 1)$ OR

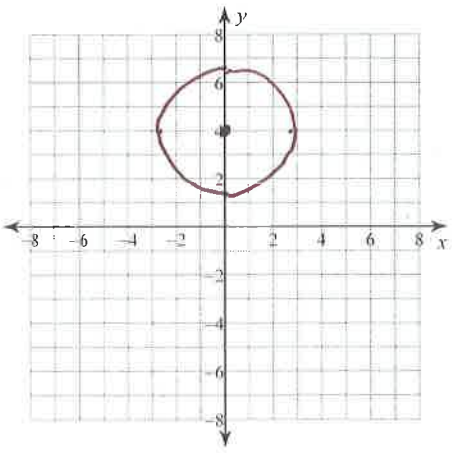
$\frac{-28}{3}$ point-slope $y - 8 = \frac{-28}{3}(x + 4)$

$y - 8 = \frac{-28}{3}x - \frac{112}{3}$

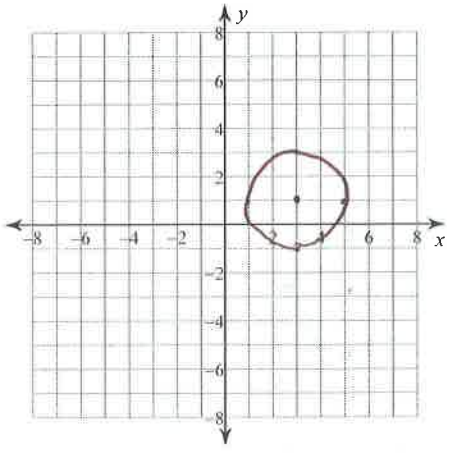
slope-intercept $y = \frac{-28}{3}x - \frac{88}{3}$

Identify the center and radius of each. Then sketch the graph.

5) $x^2 + (y - 4)^2 = 8$ $(0, 4)$ $r = \sqrt{8} \approx 2.8$



6) $(x - 3)^2 + (y - 1)^2 = 4$ $(3, 1)$ $r = 2$



Use the information provided to write the standard form equation of each circle.

7) $x^2 + y^2 - 26x + 6y + 169 = 0$

$x^2-26x+169+y^2+6y+9 = -169+169+9$

$(x-13)^2 + (y+3)^2 = 9$

8) $x^2 + y^2 - 16x + 8y + 55 = 0$

$x^2-16x+64+y^2+8y+16 = -55+64+16$

$(x-8)^2 + (y+4)^2 = 25$

9) $x^2 + y^2 + 6x + 12y - 36 = 0$

$x^2+6x+9+y^2+12y+36 = 36+9+36$

$(x+3)^2 + (y+6)^2 = 81$

10) $x^2 + y^2 + 14x + 18y + 121 = 0$

$x^2+14x+49+y^2+18y+81 = -121+49+81$

$(x+7)^2 + (y+9)^2 = 9$

11) $x^2 + y^2 + 4x - 14y - 68 = 0$

$x^2+4x+4+y^2-14y+49 = 68+4+49$

$(x+2)^2 + (y-7)^2 = 121$

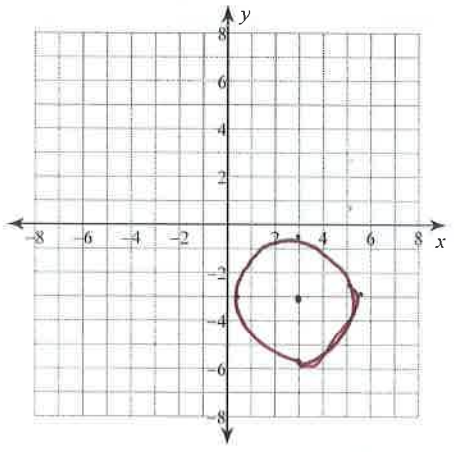
12) $x^2 + y^2 - 32x - 18y + 336 = 0$

$x^2-32x+256+y^2-18y+81 = -336+256+81$

$(x-16)^2 + (y-9)^2 = 1$

Identify the center and radius of each. Then sketch the graph.

13) $x^2 + y^2 - 6x + 6y + 11 = 0$

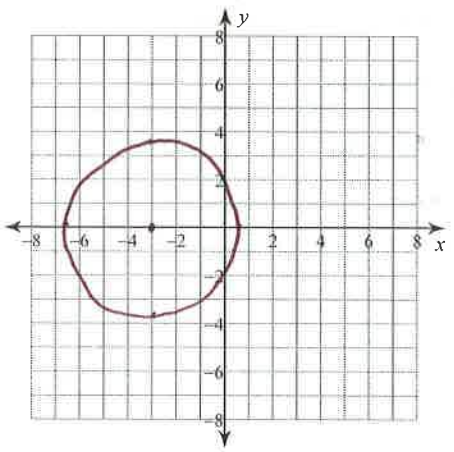


$x^2-6x+9+y^2+6y+9 = -11+9+9$

$(x-3)^2 + (y+3)^2 = 7$

$(+3,-3)$ $r = \sqrt{7} \approx 2.6$

14) $x^2 + y^2 + 6x - 3 = 0$



$x^2+6x+9+y^2 = 3+9$

$(x+3)^2 + y^2 = 12$

$(-3,0)$ $r = \sqrt{12} \approx 3.5$

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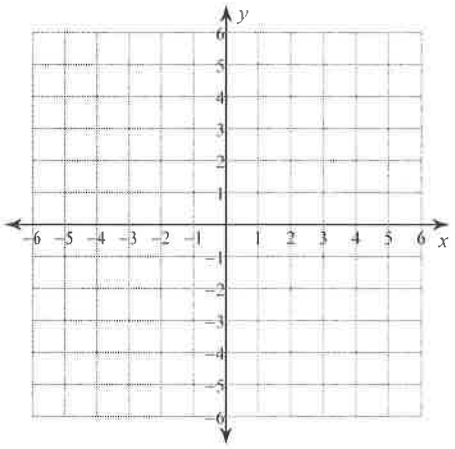

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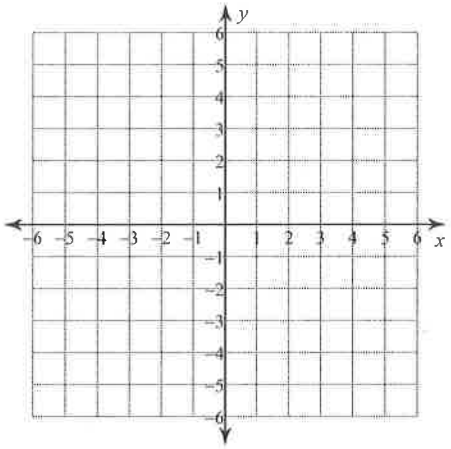

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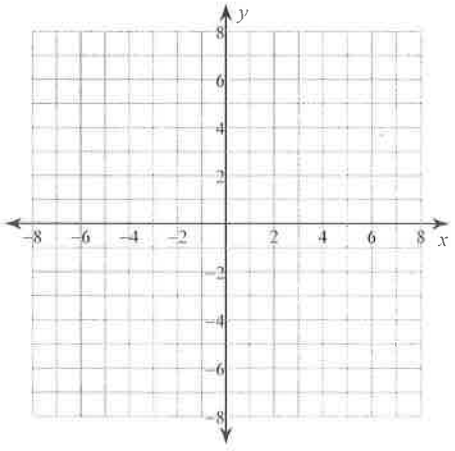

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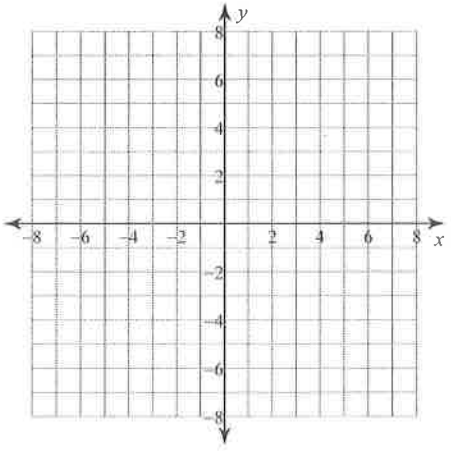

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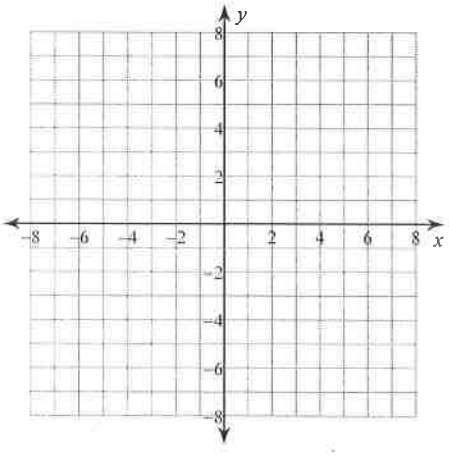

14) $x^2 + y^2 + 6x - 3 = 0$