

Calculate the x and y intercepts.

① $2x + 5y = 20$

Let $x=0$
to find y .

$$2(0) + 5y = 20$$

$$5y = 20$$

$$y = 4$$

$$(0, 4)$$

Let $y=0$
to find x .

$$2x + 5(0) = 20$$

$$2x = 20$$

$$x = 10$$

$$(10, 0)$$

② $3x - 4y = 24$

$$3(0) - 4y = 24$$

$$-4y = 24$$

$$y = -6$$

$$(0, -6)$$

$$3x - 4(0) = 24$$

$$3x = 24$$

$$x = 8$$

$$(8, 0)$$

③ $x + 2y = 10$

$$0 + 2y = 10$$

$$y = 5$$

$$(0, 5)$$

$$x + 2(0) = 10$$

$$x = 10$$

$$(10, 0)$$

④ $5x - 4y = 20$

$$5(0) - 4y = 20$$

$$-4y = 20$$

$$y = -5$$

$$(0, -5)$$

$$5x - 4(0) = 20$$

$$5x = 20$$

$$x = 4$$

$$(4, 0)$$

Is the point on the line?

① $(4, 2)$

$$2x + 5y = 20$$

$$2(4) + 5(2) \stackrel{?}{=} 20$$

$$8 + 10 \stackrel{?}{=} 20$$

$$18 \neq 20$$

not on the
line

② $(12, 3)$

$$3x - 4y = 24$$

$$3(12) - 4(3) \stackrel{?}{=} 24$$

$$36 - 12 \stackrel{?}{=} 24$$

$$24 = 24$$

✓

③ $(14, -2)$

$$x + 2y = 10$$

$$14 + 2(-2) \stackrel{?}{=} 10$$

$$14 - 4 \stackrel{?}{=} 10$$

$$10 = 10$$

✓

④ $(5, 1)$

$$5x - 4y = 20$$

$$5(5) - 4(1) \stackrel{?}{=} 20$$

$$25 - 4 \stackrel{?}{=} 20$$

$$21 \neq 20$$

not on the
line

Tue 10/16 (cont.)

Given the center and radius write the equation of the circle in standard form.

① (4, 2) $r=3$

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

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

② (-3, -6) $r=0.5$

$$(x+3)^2 + (y+6)^2 = (0.5)^2$$

$$(x+3)^2 + (y+6)^2 = 0.25$$

③ (5, 0) $r=\frac{1}{3}$

$$(x-5)^2 + (y-0)^2 = \left(\frac{1}{3}\right)^2$$

$$(x-5)^2 + y^2 = \frac{1}{9}$$

④ (0, 0) $r=0.03$

$$(x-0)^2 + (y-0)^2 = (0.03)^2$$

$$x^2 + y^2 = 0.0009$$

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MATH 1314 + MATH 0270
College Algebra with Foundations
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Given the equation write the radius and the center

① $(x+7)^2 + (y-3)^2 = 100$

Center (-7, 3)

radius = $\sqrt{100} = 10$

② $(x-1)^2 + (y+6)^2 = 20$

Center (1, -6)

radius = $\sqrt{20} = \sqrt{4 \cdot 5} = \sqrt{2 \cdot 2 \cdot 5} = 2\sqrt{5}$

③ $x^2 + (y+2)^2 = \frac{9}{16}$

Center (0, -2)

radius = $\sqrt{\frac{9}{16}} = \frac{\sqrt{9}}{\sqrt{16}} = \frac{3}{4}$

④ $x^2 + y^2 = 1369$

Center (0, 0)

radius = $\sqrt{1369} = 37$