

Unit 6 Practice #1

#12

(The Unit 6 Test will consist of all of the types of problems found on this practice assignment. The only concept missing is sketching the graph of the circle.)

****Complete ALL of your work on a SEPARATE SHEET OF PAPER.****

Write the equation of the circle with the given information.

1) Center: (6, 5), radius = 7

3) Point on the circle: (5, -7), Center: (2, 1)

2) Center: (-3, 0), radius = $\sqrt{21}$

4) Point on the circle: (0, -9), Center: (-4, -3)

For the given equation, identify the center and radius.

5) $x^2 + y^2 = 6$

7) $(x-1)^2 + (y-6)^2 = 49$

6) $(x+4)^2 + (y-10)^2 = 8$

8) $x^2 + (y+5)^2 = 100$

Write each equation in general form.

9) $(x-3)^2 + (y+7)^2 = 11$

10) $(x+9)^2 + y^2 = 16$

Write each equation in standard form. Then identify the center and radius of the circle.

11) $x^2 + y^2 + 24x - 8y + 151 = 0$

12) $x^2 + y^2 - 22x + 40 = 0$

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1) C: (6, 5), r = 7

$$(x-6)^2 + (y-5)^2 = 49$$

2) C: (-3, 0), r = $\sqrt{21}$

$$(x+3)^2 + y^2 = 21$$

3) Point on circle: (5, -7)
Center: (2, 1)

$$(x-2)^2 + (y-1)^2 = r^2$$

$$(5-2)^2 + (-7-1)^2 = r^2$$

$$(3)^2 + (-8)^2 = r^2$$

$$9 + 64 = r^2$$

$$73 = r^2$$

$$(x-2)^2 + (y-1)^2 = 73$$

4) Point on circle: (0, -9)
Center: (-4, -3)

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

$$(0+4)^2 + (-9+3)^2 = r^2$$

$$(4)^2 + (-6)^2 = r^2$$

$$16 + 36 = r^2$$

$$52 = r^2$$

$$(x+4)^2 + (y+3)^2 = 52$$

5) $x^2 + y^2 = 6$

$$C: (0, 0), r = \sqrt{6}$$

6) $(x+4)^2 + (y-10)^2 = 8$

$$C: (-4, 10), r = \sqrt{8}$$

7) $(x-1)^2 + (y-6)^2 = 49$

$$C: (1, 6), r = 7$$

8) $x^2 + (y+5)^2 = 100$

$$C: (0, -5), r = 10$$

$$9) (x-3)^2 + (y+7)^2 = 11$$

$$(x-3)(x-3) + (y+7)(y+7) = 11$$

$$x^2 - 3x - 3x + 9 + y^2 + 7y + 7y + 49 = 11$$

$$x^2 - 6x + y^2 + 14y + 58 = 11$$

$$(x^2 + y^2 - 6x + 14y + 47 = 0)$$

$$10) (x+9)^2 + y^2 = 16$$

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

$$x^2 + 9x + 9x + 81 + y^2 = 16$$

$$x^2 + 18x + 81 + y^2 = 16$$

$$(x^2 + y^2 + 18x + 65 = 0)$$

$$11) x^2 + y^2 + 24x - 8y + 151 = 0$$

$$(x^2 + 24x + 144) + (y^2 - 8y + 16) = -151 + 144 + 16$$

$$\left(\frac{24}{2}\right)^2 = (12)^2 = 144 \quad \left(\frac{-8}{2}\right)^2 = (-4)^2 = 16$$

$$(x+12)^2 + (y-4)^2 = 9$$

$$12) x^2 + y^2 - 22x + 40 = 0$$

$$(x^2 - 22x + 121) + y^2 = -40 + 121$$

$$\left(\frac{-22}{2}\right)^2 = (-11)^2 = 121$$

$$(x-11)^2 + y^2 = 81$$