

11.7 ex 14 $-1 \cdot x^2$

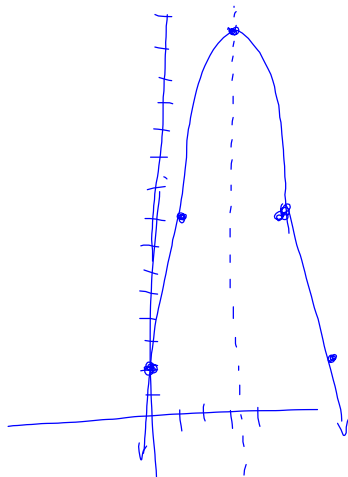
$$f(x) = -x^2 + 7x + 2$$

$$\text{axis} = \frac{-B}{2A} = \frac{-7}{2(-1)} = \frac{7}{2} = 3.5$$

$$\text{Vertex } (3.5, 14.25) \leftarrow -1(3.5)^2 + 7(3.5) + 2$$

$$A < 0 \text{ open downward } -1(2.25) + 24.5 + 2$$

x	y
0	2
1	8

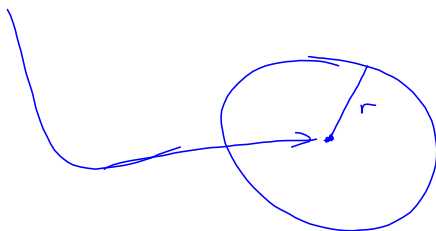


13.2 p. 825

$$(x - h)^2 + (y - k)^2 = r^2$$

Center (h, k)

$r = \text{radius}$



ex 8 $C(5, -2) \quad r = 4$

$$(x - 5)^2 + (y + 2)^2 = 16$$

ex 10 $C(-12, 13) \quad r = \sqrt{7} = 2.646$

$$(x + 12)^2 + (y - 13)^2 = 7$$

ex 12

$$x^2 + y^2 - 8x - 12y + \underline{3} = \underline{-3}$$

$$x^2 - 8x + \underline{16} + y^2 - 12y + \underline{36} = -3 + \underline{16} + \underline{36}$$

$$(x - 4)^2 + (y - 6)^2 = 49$$

$$C(4, 6) \quad \text{radius} = \sqrt{49} = 7$$

$$\underline{\text{ex 14}} \quad x^2 + y^2 - 2x + 4y - 4 = 0$$

$$x^2 - 2x + \frac{1}{1} + y^2 + 4y + \frac{4}{1} = 4 + 1 + 4$$

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

$$C(1, -2) \quad \text{radius} = \sqrt{9} = 3$$

ex 16

$$\frac{2x^2}{2} + \frac{2y^2}{2} + \frac{20x}{2} + \frac{16y}{2} + \frac{+10}{2} = \frac{0}{2}$$

$$x^2 + 10x + \frac{25}{1} + y^2 + 8y + \frac{16}{1} = -5 + 25 + 16$$

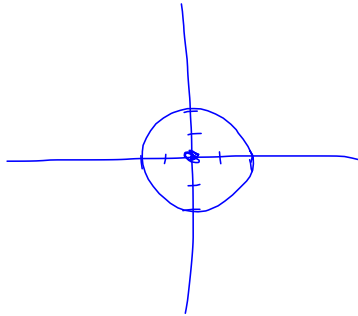
$$(x+5)^2 + (y+4)^2 = 36$$

$$C(-5, -4) \quad \text{radius} = \sqrt{36} = 6$$

ex 18

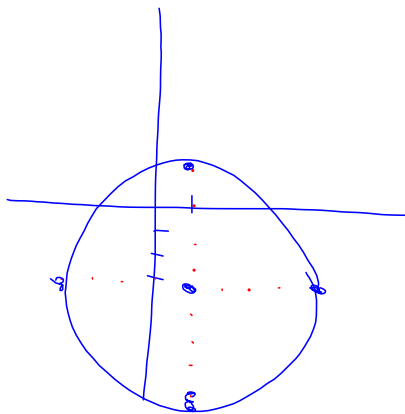
$$x^2 + y^2 = 4$$
$$(x-0)^2 + (y-0)^2 = 4$$

$$C(0,0) \quad \text{radius} = \sqrt{4} = 2$$

ex 22

$$(x-1)^2 + (y+3)^2 = 16$$

$$C(1,-3) \quad r = \sqrt{16} = 4$$



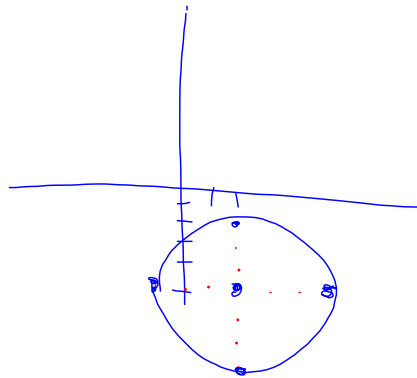
ex 26

$$x^2 + y^2 - 4x + 10y + 20 = 0$$

$$x^2 - 4x + 4 + y^2 + 10y + 25 = -20 + 4 + 25$$

$$(x-2)^2 + (y+5)^2 = 9$$

C (2, -5) radius = $\sqrt{9} = 3$



1-2 solve by square root method
11.1

3-6 solve by completing the square
11.2

7-10 solve by quadratic formula
11.3

4 equations
two methods

11-14 Equations in quadratic form (u substit.)
11.4

15-18 graph parabolas
11.6-11.7

19-20 circles
13.2