

10-4 B.

1. center (0,0)

$b > 1$  horizontal

vertices (-4,0) (4,0) major axis 8 units long

co-vertices (0,-1) (0,1) minor axis 2 units long

foci

$$c^2 = a^2 - b^2$$

$$c^2 = 16 - 1$$

$$c^2 = 15$$

$c = \pm \sqrt{15}$  foci  $(-\sqrt{15}, 0)$   $(\sqrt{15}, 0)$  graph paper

10. center (5,4)

major axis horiz.

$$\frac{(x-5)^2}{64} + \frac{(y-4)^2}{\frac{81}{4}} = 1$$

$$16 = 2a$$

$$8 = a$$

$$64 = a^2$$

$$(y-4)^2 = \frac{4}{81}$$

$$a = 2b$$

$$\frac{a}{2} = b$$

$$\frac{8}{2} = b$$

$$\frac{(x-5)^2}{64} + \frac{4(y-4)^2}{81}$$

12. center (0,0)

horizontal ellipse

$$\frac{x^2}{36} + \frac{y^2}{20} = 1$$

$$a = 6 \quad a^2 = 36$$

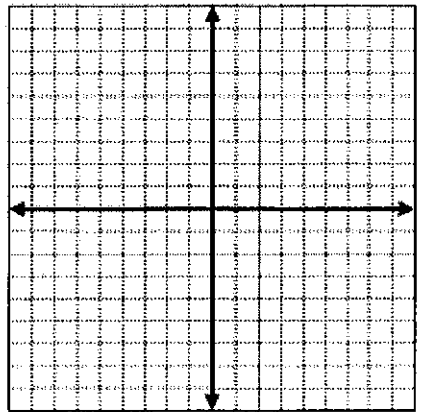
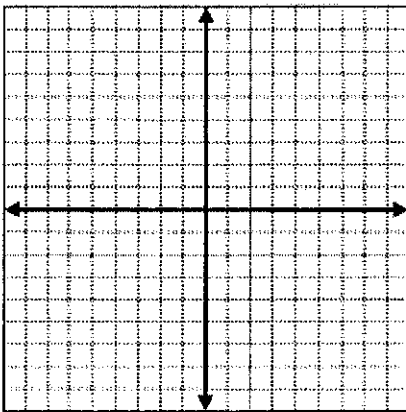
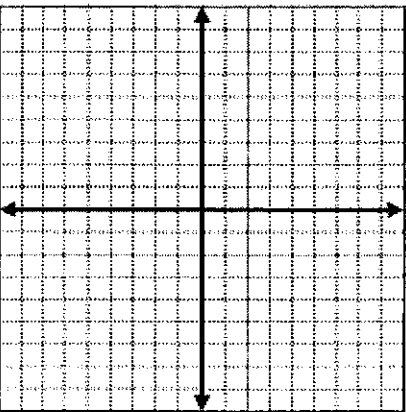
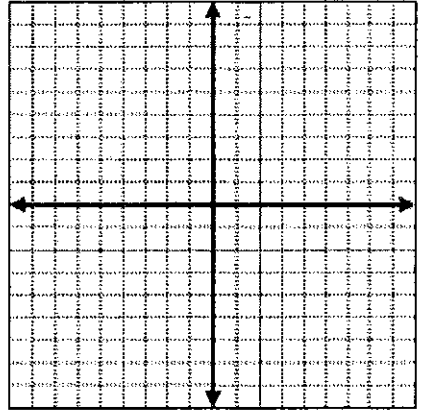
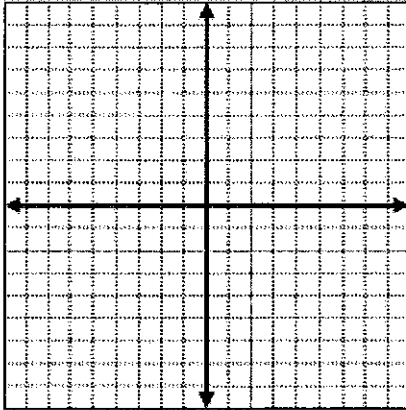
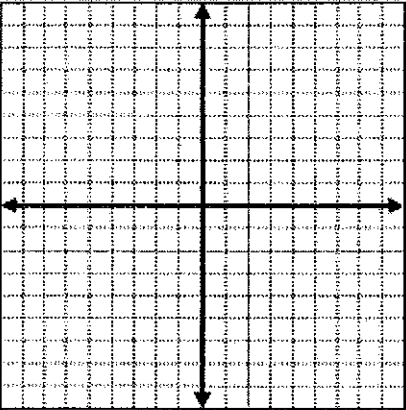
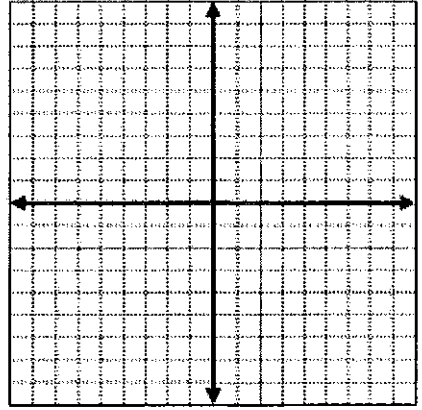
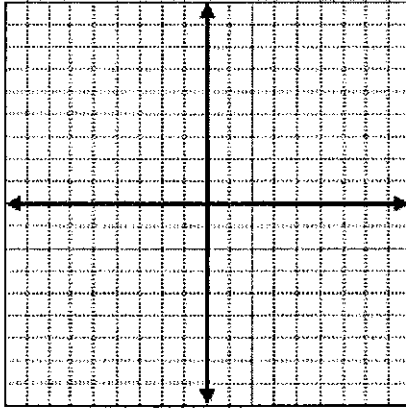
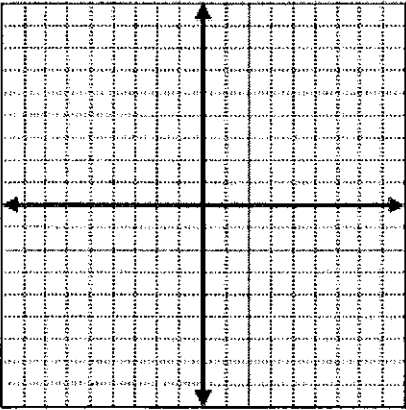
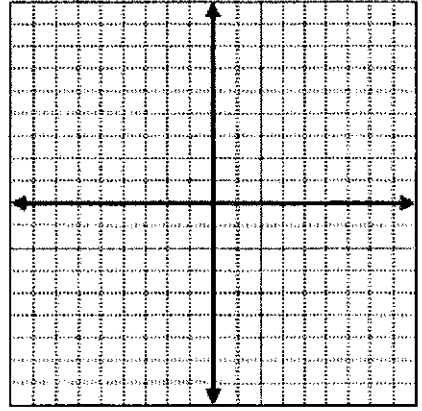
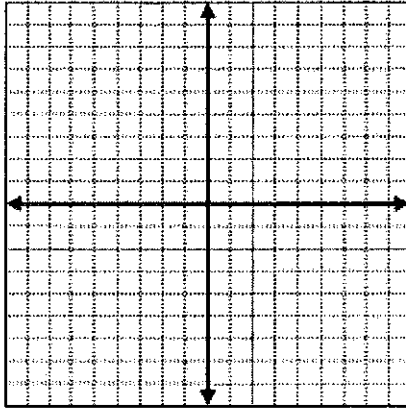
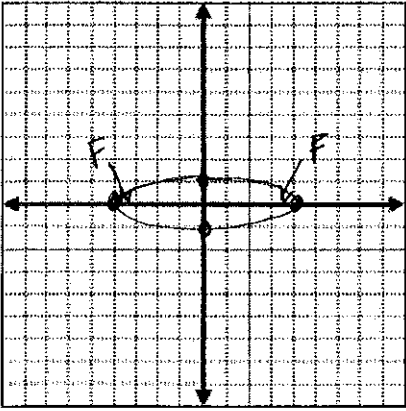
$$\text{foci } c = 4 \quad c^2 = 16$$

$$c^2 = a^2 - b^2$$

$$16 = 36 - b^2$$

$$-20 = -b^2$$

$$20 = b^2$$



Algebra II 10-4B Worksheet Answers

Key

1. C: (0, 0), V: (4, 0) & (-4, 0), C.V.: (0, 1) & (0, -1),  
major: 8, minor: 2, Foci:  $(\sqrt{15}, 0)$  &  $(-\sqrt{15}, 0)$  Horizontal
2. C: (0, 0), V: (0, 5) & (0, -5), C.V.: (3, 0) & (-3, 0),  
major: 10, minor: 6, Foci: (0, 4) & (0, -4) Ver
3. C: (0, 5), V: (9, 5) & (-9, 5), C.V.: (0, 12) & (0, -2),  
major: 18, minor: 14, Foci:  $(4\sqrt{2}, 5)$  &  $(-4\sqrt{2}, 5)$  Horizontal
4. C: (-3, 0), V: (2, 0) & (-8, 0), C.V.: (-3, 3) & (-3, -3),  
major: 10, minor: 6, Foci: (1, 0) & (-7, 0) Horizontal
5. C: (2, -5), V: (8, -5) & (-4, -5), C.V.: (2, -1) & (2, -9),  
major: 12, minor: 8, Foci:  $(2 + 2\sqrt{5}, -5)$  &  $(2 - 2\sqrt{5}, -5)$  Horizontal
6. C: (4, 4), V: (4, 15) & (4, -7), C.V.: (8, 4) & (0, 4),  
major: 22, minor: 8, Foci:  $(4, 4 + \sqrt{105})$  &  $(4, 4 - \sqrt{105})$  Ver
7. C: (-2, -3), V: (-2, 9) & (-2, -15), C.V.: (7, -3) & (-11, -3), major: 24, minor: 18,  
Foci:  $(-2, -3 + 3\sqrt{7})$  &  $(-2, -3 - 3\sqrt{7})$  Ver
8. C: (8, -8), V: (10, -8) & (6, -8), C.V.: (8, -7) & (8, -9),  
major: 4, minor: 2, Foci:  $(8 + \sqrt{3}, -8)$  &  $(8 - \sqrt{3}, -8)$  Horizontal
9. C: (4, -5), V: (15, -5) & (-7, -5), C.V.: (4, 3) & (4, -13),  
major: 22, minor: 16, Foci:  $(4 + \sqrt{57}, -5)$  &  $(4 - \sqrt{57}, -5)$  Horizontal

$$10. \frac{(x-5)^2}{64} + \frac{4(y-4)^2}{81} = 1$$

$$11. \frac{(x+2)^2}{16} + \frac{(y-3)^2}{36} = 1$$

$$12. \frac{x^2}{36} + \frac{y^2}{20} = 1$$

~~$$13. \frac{x^2}{27} + \frac{(y+6)^2}{36} = 1$$~~

$$\frac{x^2}{5.25} + \frac{(y+5.5)^2}{30.25} = 1$$

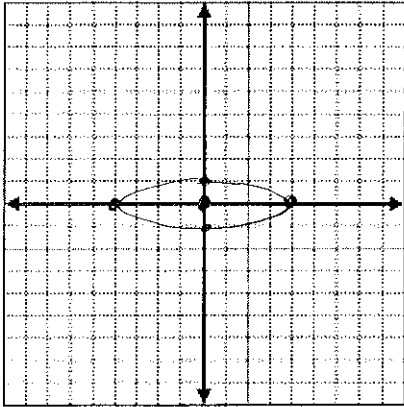
$$14. \frac{x^2}{39} + \frac{y^2}{64} = 1$$

$$15. \frac{(x+3)^2}{25} + \frac{(y-3)^2}{9} = 1$$

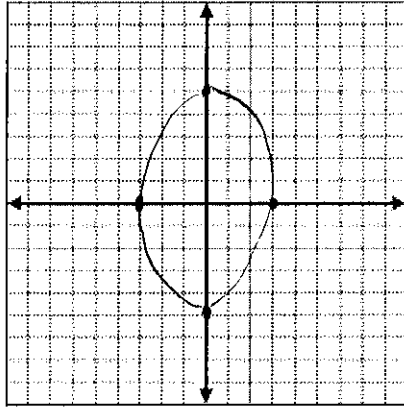
$$16. \frac{(x-4.5)^2}{12.25} + \frac{(y+1)^2}{3.25} = 1$$

$$17. \frac{(x+2)^2}{12} + \frac{(y-6)^2}{16} = 1$$

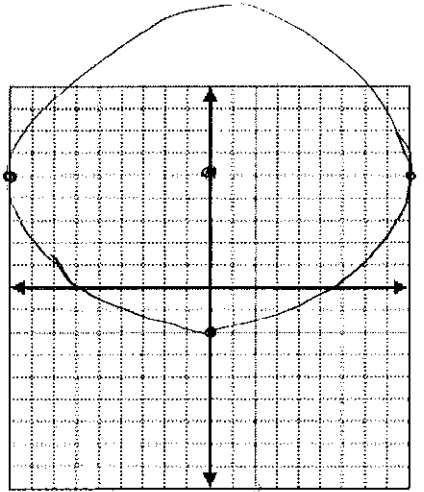
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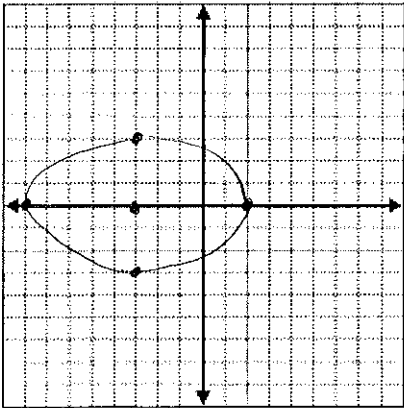
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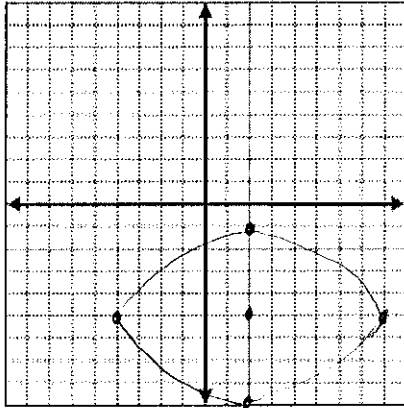
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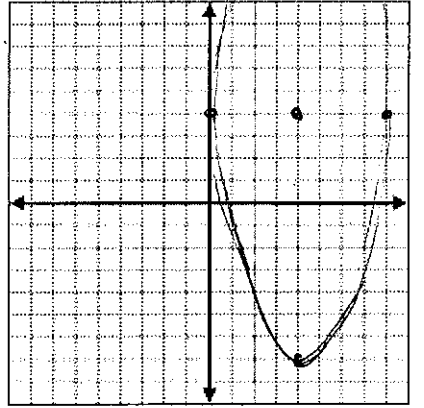
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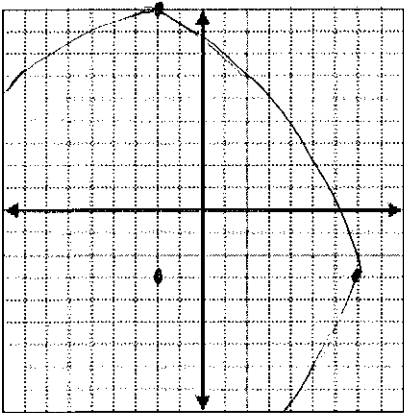
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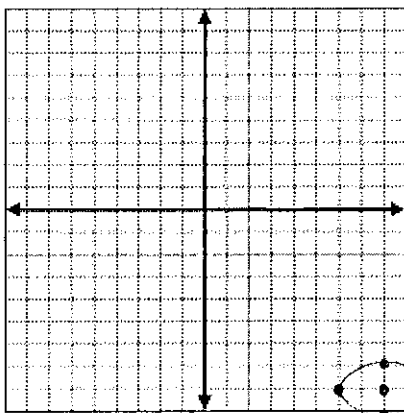
6.



7.



8.



9.

