

10.5 b

1. center (0,0)

x is first, so vertices on x-axis (-4,0) (4,0)

asymptotes slope: $m = \frac{y}{x} = \frac{1}{4}$ and $-\frac{1}{4}$

foci are outside vertices $c^2 > a^2$

$$c^2 = a^2 + b^2$$

$$c^2 = 16 + 1$$

$$c^2 = 17$$

$$c = \pm \sqrt{17}$$

$$(-\sqrt{17}, 0) (\sqrt{17}, 0)$$

graph paper

10. center is (0,0)

horizontal opening x is first

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

a^2 is always first

b^2 is always second

12. horizontal opening; x is first

center (0,0)

$$a = 3 \quad a^2 = 9$$

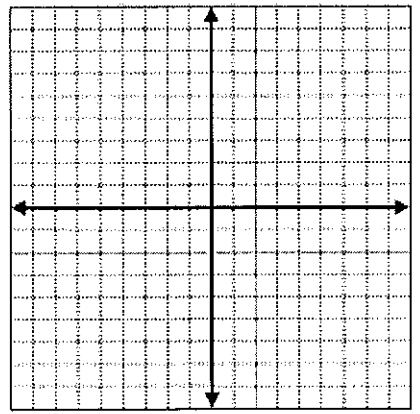
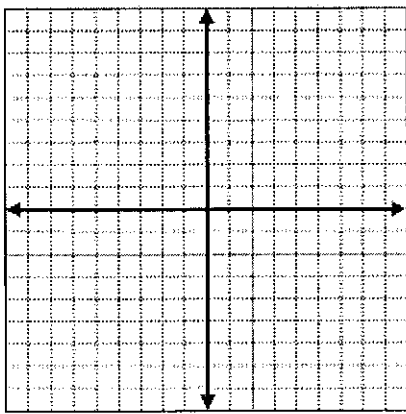
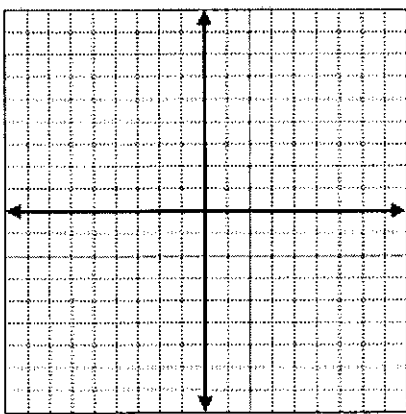
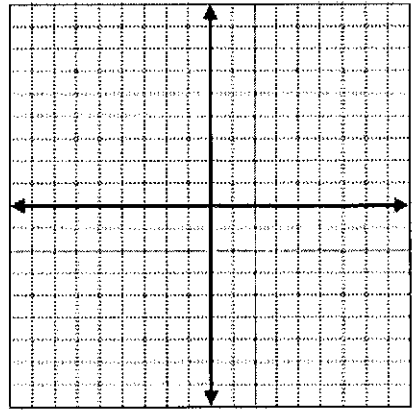
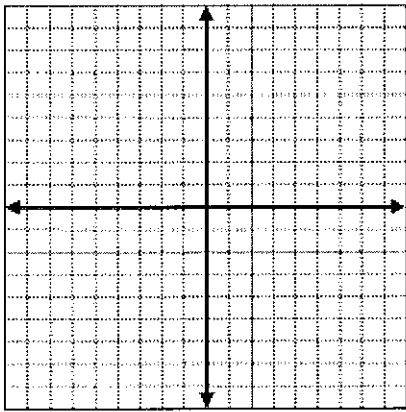
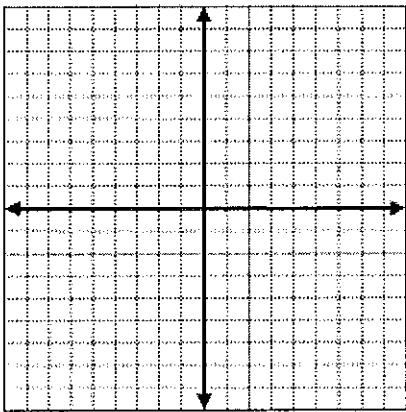
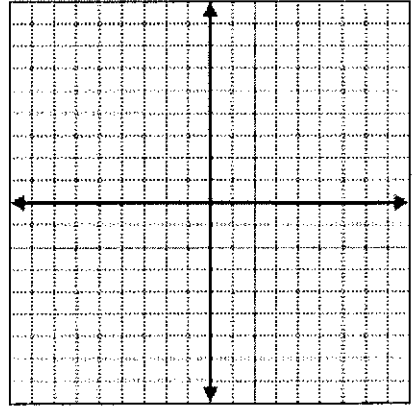
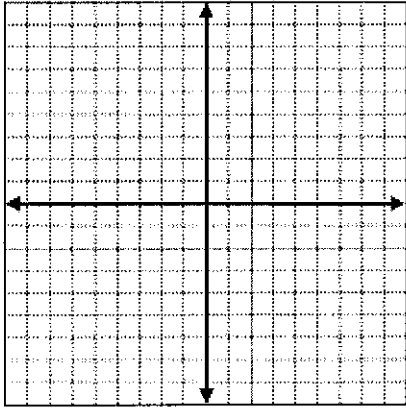
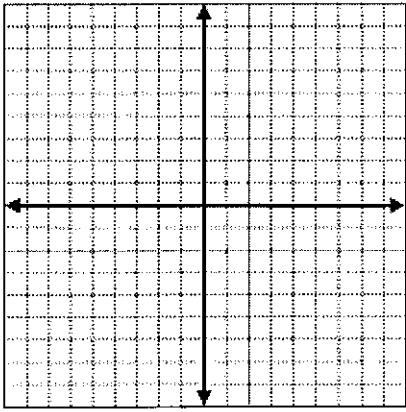
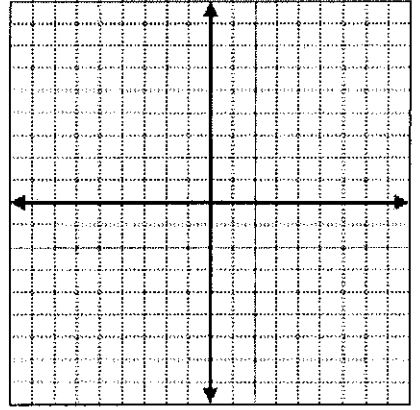
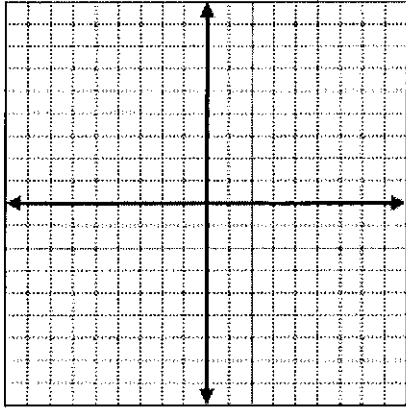
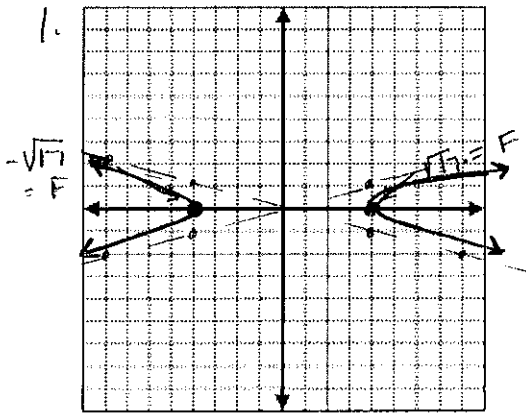
$$c^2 = a^2 + b^2$$

$$5^2 = 3^2 + b^2$$

$$25 = 9 + 16$$

$$16 = b^2$$

$$\frac{x^2}{9} - \frac{y^2}{16} = 1$$



Algebra II 10-5B Worksheet Answers

1. C: (0, 0), Horizontal, V: (4, 0) & (-4, 0), Asy: $\pm \frac{1}{4}$,
F: $(\sqrt{17}, 0)$ & $(-\sqrt{17}, 0)$
2. C: (0, 0), Vertical, V: (0, 5) & (0, -5), Asy: $\pm \frac{5}{2}$,
F: $(0, \sqrt{29})$ & $(0, -\sqrt{29})$
3. C: (0, 4), Horizontal, V: (3, 4) & (-3, 4), Asy: ± 2 ,
F: $(3\sqrt{5}, 4)$ & $(-3\sqrt{5}, 4)$
4. C: (-3, 0), Vertical, V: (-3, 5) & (-3, -5), Asy: $\pm \frac{5}{7}$,
F: $(-3, \sqrt{74})$ & $(-3, -\sqrt{74})$
5. C: (-6, -3), Horizontal, V: (0, -3) & (-12, -3),
Asy: $\pm \frac{1}{2}$, F: $(-6 + 3\sqrt{5}, -3)$ & $(-6 - 3\sqrt{5}, -3)$
6. C: (2, 3), Vertical, V: (2, 8) & (2, -2), Asy: $\pm \frac{5}{4}$,
F: $(2, 3 + \sqrt{41})$ & $(2, 3 - \sqrt{41})$

7. C: $(-2, 4)$, Vertical, V: $(-2, 8)$ & $(-2, 0)$, Asy: $\pm \frac{4}{3}$,
F: $(-2, 9)$ & $(-2, -1)$

8. C: $(-1, 4)$, Horizontal, V: $(1, 4)$ & $(-3, 4)$, Asy: $\pm \frac{3}{2}$,
F: $(-1 + \sqrt{13}, 4)$ & $(-1 - \sqrt{13}, 4)$

9. C: $(1, -2)$, Horizontal, V: $(4, -2)$ & $(-2, -2)$, Asy: $\pm \frac{5}{3}$,
F: $(1 + \sqrt{34}, -2)$ & $(1 - \sqrt{34}, -2)$

10. $\frac{x^2}{1} - \frac{y^2}{16} = 1$

11. $\frac{(y-4)^2}{4} - \frac{(x-5)^2}{36} = 1$

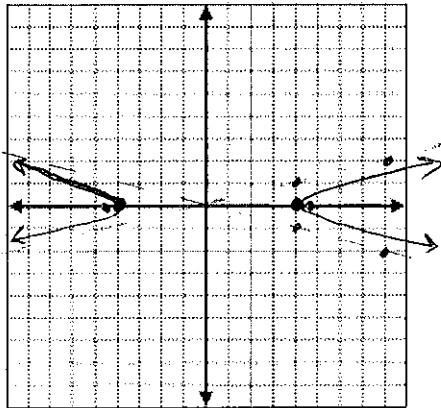
12. $\frac{x^2}{9} - \frac{y^2}{16} = 1$

13. $\frac{y^2}{4} - \frac{x^2}{21} = 1$

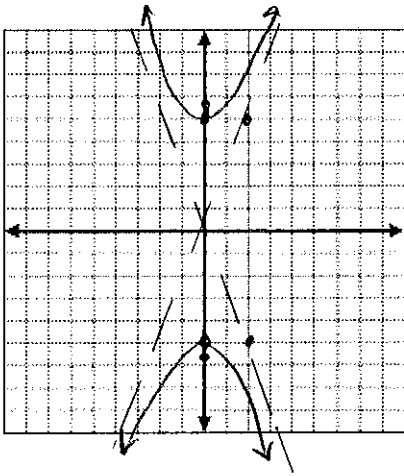
14. $\frac{(y+5.5)^2}{6.25} - \frac{x^2}{6} = 1$

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

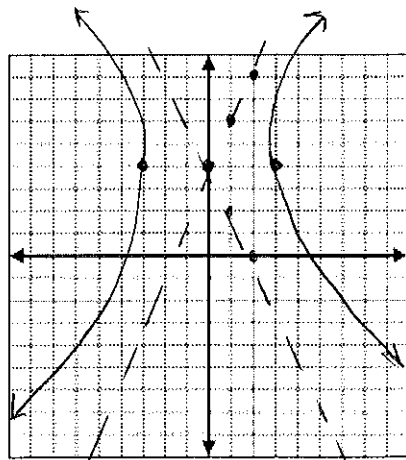
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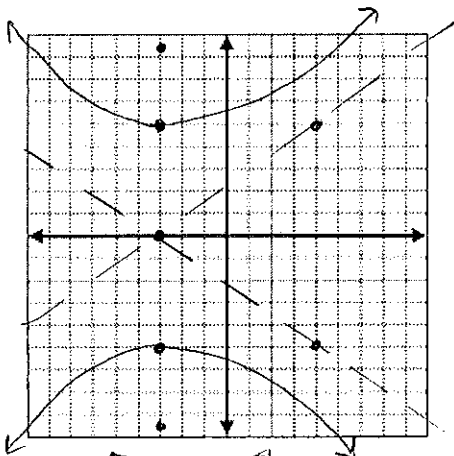
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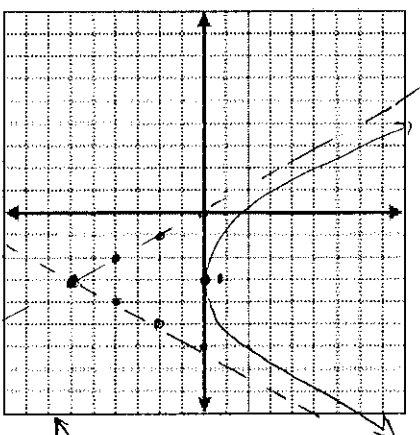
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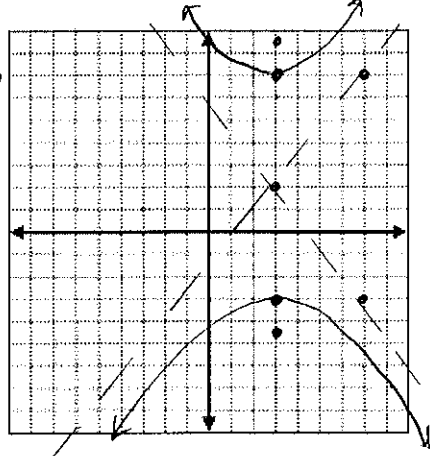
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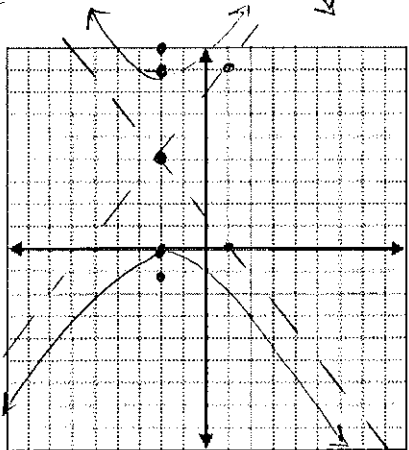
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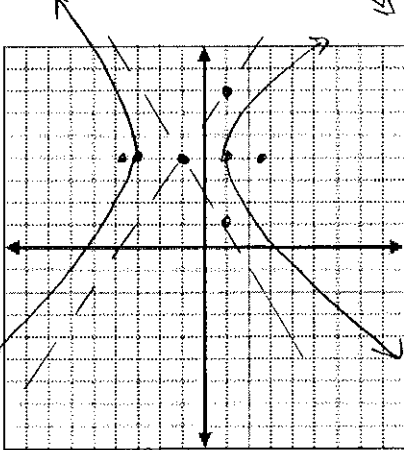
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8



9

