

Algebra 3 Assignment # 2

Write the equation of the ellipse which satisfies each of the following please.

- (1) Foci at $(-2, 3)$ and $(4, 3)$ if the length of the major axis is 10.
- (2) Foci at $(-2, 5)$ and $(-2, 1)$ if the length of the major axis is 8.
- (3) Foci at $(0, 3)$ and $(4, 3)$, vertices at $(-4, 3)$ and $(8, 3)$.
- (4) Foci at $(-2, -3)$ and $(-2, 1)$, vertices at $(-2, -6)$ and $(-2, 4)$.
- (5) The endpoints of the major axis are $(-4, 5)$ and $(2, 5)$, the endpoints of the minor axis are $(-1, 7)$ and $(-1, 3)$.
- (6) Foci at $(-3, -1)$ and $(-3, 5)$ if the length of the minor axis is 6.

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Answers

$$(1) \frac{(x - 1)^2}{25} + \frac{(y - 3)^2}{16} = 1$$

$$(2) \frac{(x + 2)^2}{12} + \frac{(y - 3)^2}{16} = 1$$

$$(3) \frac{(x - 2)^2}{36} + \frac{(y - 3)^2}{32} = 1$$

$$(4) \frac{(x + 2)^2}{21} + \frac{(y + 1)^2}{25} = 1$$

$$(5) \frac{(x + 1)^2}{9} + \frac{(y - 5)^2}{4} = 1$$

$$(6) \frac{(x + 3)^2}{9} + \frac{(y - 2)^2}{18} = 1$$