

Indicate whether each sentence is true or false by circling the appropriate letter, 'T' or 'F.'

- | | | |
|----|--------|--|
| 1) | T or F | An ellipse's foci are always on its major axis. |
| 2) | T or F | For a hyperbola, the foci are always further from the center compared to its vertices. |
| 3) | T or F | The circle $x^2 + (y - 1)^2 = 9$ has a center at (0,1) and a radius of 9. |
| 4) | T or F | This is the focal distance formula for a hyperbola: $f = \sqrt{a^2 + b^2}$. |
| 5) | T or F | The hyperbola $\frac{(x-4)^2}{49} - \frac{(y+3)^2}{64} = 1$ has these asymptotes: $y + 3 = \pm \frac{7}{8}(x - 4)$. |

6) For problems #1-5, for those that are false explain why they are false using the space below.

Identify the conic section types by using a P, C, H, and E for a parabola, circle, hyperbola, and ellipse, respectively.

	Type	Equation in General Form
7)		$x^2 + y^2 + 4x - 6y - 3 = 0$
8)		$25x^2 - y^2 + 50x + 4y - 79 = 0$
9)		$x^2 + 4y^2 - 10x + 16y + 37 = 0$
10)		$x^2 + 6x - 2y + 1 = 0$

11) Graph the hyperbola from #7-10. Graph all critical points: center, vertices, foci, and asymptotes.

Space to Convert from General to Standard Form	Graph of Hyperbola