

September 9, 2015  
 200 (x-3) + 7  
 $\{x \mid x \in \mathbb{R} \text{ and } x \neq 3 \text{ and } x \neq 3\}$   
 $(-\infty, 3) \cup (3, \infty)$   
 $\frac{2(x-3)(x+3) - 4}{x-3} = \frac{2(x^2-9)-4}{x-3}$   
 $\frac{2(x^2-9)-4}{x-3} = \frac{2x^2-18-4}{x-3} = \frac{2x^2-22}{x-3}$   
 $\frac{2(x^2-11)}{x-3}$   
 $\frac{2(x^2-11)}{x-3} = 10x + 100$   
 $2(x^2-11) = (10x+100)(x-3)$   
 $2x^2 - 22 = 10x^2 - 30x + 100x - 300$   
 $2x^2 - 22 = 10x^2 - 70x - 300$   
 $-8x^2 + 68x - 278 = 0$   
 $8x^2 - 68x + 278 = 0$   
 $4x^2 - 34x + 139 = 0$   
 $x = \frac{34 \pm \sqrt{34^2 - 4 \cdot 4 \cdot 139}}{2 \cdot 4}$   
 $x = \frac{34 \pm \sqrt{1156 - 2224}}{8}$   
 $x = \frac{34 \pm \sqrt{-1068}}{8}$

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

#1)  $(x-1)^2 + (y+3)^2 = \frac{4}{2^2}$   
 $h=1 ; k=-3$   
 $(y+3) = (y-(-3))$

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#9)  $(1, -3) \rightarrow \text{Center}$   
 $(h, k) \rightarrow \text{Center}$   
 $r = 2 \rightarrow D = 4$   
 $(x-1)^2 + (y+3)^2 = 4$

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