③ $\dfrac{4x^2 + 4y^2 - 8x + 24y + 31}{4}$

$x^2 + y^2 - 2x + 6y = -\dfrac{31}{4} + \dfrac{4}{4} : \dfrac{36}{4} : \dfrac{9}{4}$

$(x^2 - 2x + 1) + (y^2 + 6 \cdot y + 9) = \dfrac{9}{4}$

$(x-1)^2 + (y+3)^2 = \dfrac{9}{4}$

Center: $1, -3$ $r : \dfrac{3}{2}$

③ $$\frac{4x^2 + 4y^2 - 8x + 24y + 31}{4}$$

$$x^2 + y^2 - 2x + 6y = -\frac{31}{4} + \frac{4}{4} : \frac{36}{4} : \frac{9}{4}$$
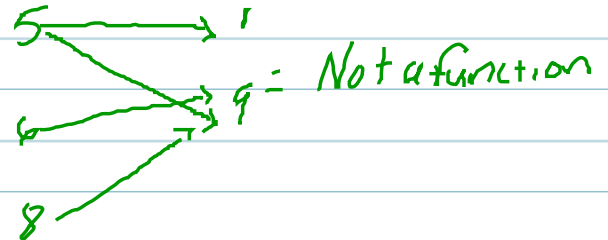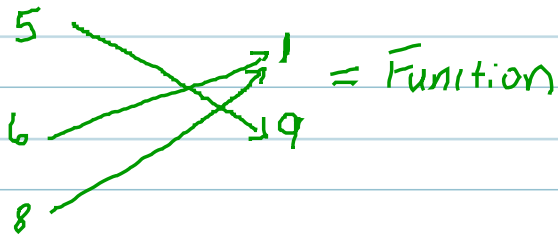
$$(x^2 - 2x + 1) + (y^2 + 6 \cdot +4) = \frac{9}{4}$$

$$(x-1)^2 + (+13)^2 = \frac{9}{4}$$

Center: $1, -3$ $r : \frac{3}{2}$

Determining If a Relation is a function

More than one domain(x) = Not a function

ex. $\{(1,3),(2,5)(1,6)\}$ = Not a Function

5 → 1, 6, 8 → 9   = Function

5 → 1, 6, 8 → 9, 7   = Not a function

$x^2 + |y| = 4$
if $x = 0$, then

$0^2 + |y| = 4$

$0 + |y| = 4$

$|y| = 4$

| y = 4 or y = -4 |

* Not a Function

$5|x| + y = 4$

$5|0| + y = 4$

$0 + y = 4$

$y = 4$

Function

• Applying Function Notation

2. $h(x) = \dfrac{x^2 - 11x + 18}{x + 6}$

find $(8) = \dfrac{(8)^2 - 11x + 18}{8 + 6}$

$= \dfrac{64 - 88 + 18}{14}$

$\dfrac{-24 + 18}{14}$

$= \dfrac{-6}{14}$

$= -\dfrac{3}{7}$