1.) How can you make the current flowing through an IR LED increase linearly with voltage?

(B.) Add a resistor in Series.

2.) The photo transister has only 2 legs since the base is an optical sensor, when the bjt's had 3 legs.

3.) $A = A_c (1 + K_2 V_{in})$

$A = 10(1 + (0.1)(5)) = 10(1 + 0.5) = 10(1.5)$

$A = 15$