

1. What is wrong with the following student's solution?

$$\frac{4x+5}{x+2} > 3$$

$$4x + 5 > 3(x + 2)$$

$$4x + 5 > 3x + 6$$

$$x > 1$$

2. What is wrong with the following student's solution?

$$(x - 5)(x + 2) > 0$$

$$x - 5 > 0 \text{ or } x + 2 > 0$$

$$x > 5 \text{ or } x > -2$$

3. Solve the inequality $x^2 - 2x - 3 > 0$ by considering the graph of $y = x^2 - 2x - 3$. Use the same method to solve the inequality $|x + 3| < 1$ (that is, first draw the graph of $y = |x + 3|$).