

2. Solve the inequalities  $7 \leq 3 + |2 - 7x|$   
express your solution sets using interval notation.

$$\left(-\frac{2}{7}, \frac{6}{7}\right)$$

$$\left[-\frac{2}{7}, \frac{6}{7}\right]$$

$$(-\infty, -\frac{2}{7}] \cup [\frac{6}{7}, +\infty)$$

$$(-\infty, -\frac{2}{7}) \cup (\frac{6}{7}, +\infty)$$

**Solution**

**Intervals**

Solve:

$$7 \leq |2 - 7x| + 3$$

$$4 \leq |2 - 7x|$$

$$4 \leq 2 - 7x \text{ or } 2 - 7x \leq -4$$

$$4 - (2) \leq -7x \text{ or } -7x \leq -4 - (2)$$

$$2 \leq -7x \text{ or } -7x \leq -6$$

Divide each side by  $-7$  and flip the inequalities

$$7 \leq |2 - 7x| + 3$$

$$x \leq -\frac{2}{7} \text{ or } x \geq \frac{6}{7}$$