

## Do Now

## Part III

Answer all 3 questions in this part. Each correct answer will receive 3 credits. Clearly indicate the necessary steps, including appropriate formula substitutions, diagrams, graphs, charts, etc. For all questions in this part, a correct numerical answer with no work shown will receive only 1 credit. [9]

34 Given:  $A = \{18, 6, -3, -12\}$

Determine all elements of set A that are in the solution of the inequality  $\frac{2}{3}x + 3 < -2x - 7$ .

$$\frac{2}{3}x + 3 < -2x - 7$$

$$\begin{array}{r} +2x \\ \hline \end{array}$$

$$2\frac{2}{3}x + 3 < -7$$

$$\begin{array}{r} -3 \\ \hline \end{array}$$

$$2\frac{2}{3}x < -10$$

$$\begin{array}{r} \frac{2\frac{2}{3}}{2\frac{2}{3}} \\ \hline \end{array}$$

$$\left(\frac{3}{3}\right)\frac{8}{3}x < -10\left(\frac{3}{3}\right)$$

$$x < -3.75$$



$$x < -3.75$$

$$x < -3\frac{3}{4}$$

$$\{12\}$$

OR

18

$$\frac{2}{3}x + 3 < -2x - 7$$

$$\frac{2}{3}(18) + 3 < -2(18) - 7$$

$$12 + 3 < -36 - 7$$

$$15 < -43$$

6

$$\frac{2}{3}x + 3 < -2x - 7$$

$$\frac{2}{3}(6) + 3 < -2(6) - 7$$

$$4 + 3 < -12 - 7$$

$$7 < -19$$

-3

$$\frac{2}{3}x + 3 < -2x - 7$$

$$\frac{2}{3}(-3) + 3 < -2(-3) - 7$$

$$-2 + 3 < 6 - 7$$

$$1 < -1$$

-12

$$\frac{2}{3}x + 3 < -2x - 7$$

$$\frac{2}{3}(-12) + 3 < -2(-12) - 7$$

$$-8 + 3 < +24 - 7$$

$$-5 < 17$$

$$\{-12\}$$