

①

Year 1 Pure Chapter 3 (part ii) Exam Question Answers

a)

$$3(x-2) < 8-2x$$

$$3x-6 < 8-2x$$

$$5x < 14$$

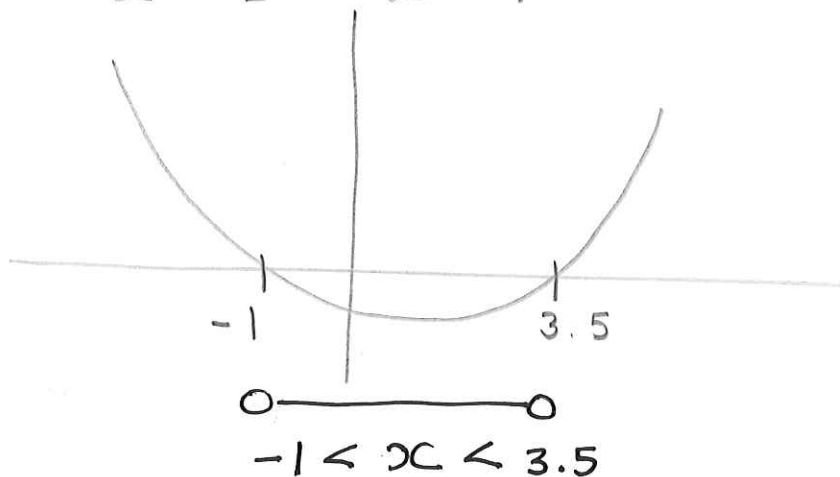
$$x < \frac{14}{5}$$

b)

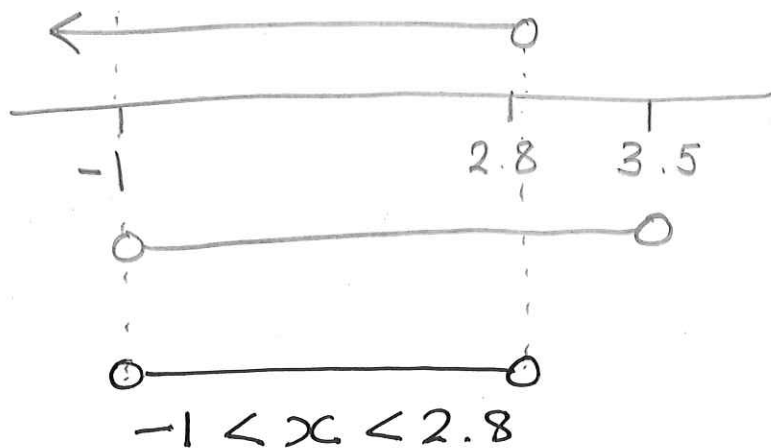
$$(2x-7)(1+x) < 0$$

$$x = 7/2$$

$$x = -1$$



c)



②
a)

$$3(2x+1) > 5 - 2x$$

$$6x + 3 > 5 - 2x$$

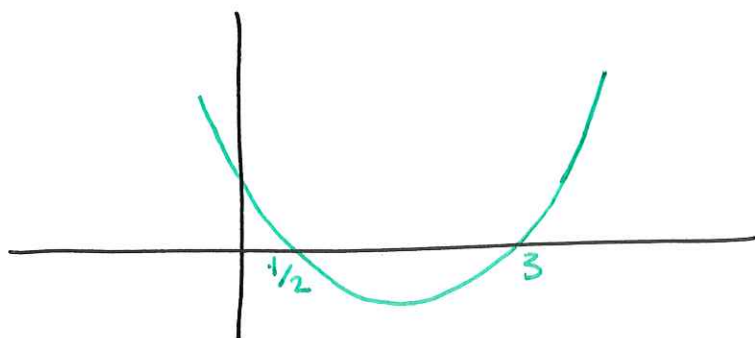
$$8x > 2$$

$$x > \frac{1}{4}$$

b)

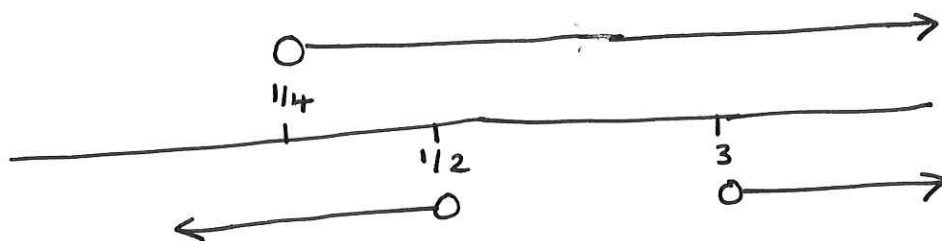
$$2x^2 - 7x + 3 > 0$$

$$(2x - 1)(x - 3) > 0$$



$$x < \frac{1}{2} \quad x > 3$$

c)



$$\frac{1}{4} < x < \frac{1}{2}$$

$$x > 3$$

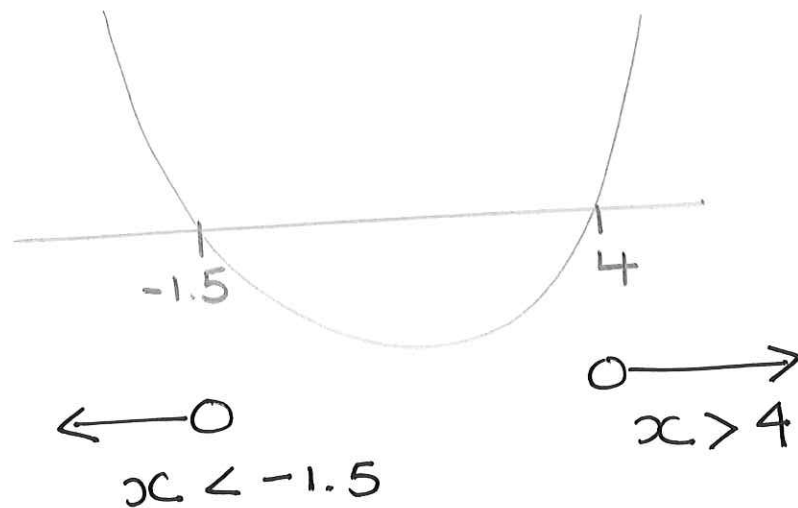
(3)

$$(2x+1)(x-2) > 2(x+5)$$

$$2x^2 - 3x - 2 > 2x + 10$$

$$2x^2 - 5x - 12 > 0$$

$$(2x+3)(x-4) > 0$$



④

a) $a = 1 \quad b = k \quad c = k + 3$

$$b^2 - 4ac > 0$$

$$k^2 - 4(1)(k+3) > 0$$

$$k^2 - 4k - 12 > 0$$

b)

$$(k + 2)(k - 6) > 0$$

$k = -2 \qquad k = 6$



$\leftarrow 0$
 $k < -2$

$0 \rightarrow$
 $k > 6$

⑤

$$a = k \quad b = 4 \quad c = (5-k)$$

$$b^2 - 4ac > 0$$

$$16 - 4(k)(5-k) > 0$$

$$16 - 20k + 4k^2 > 0$$

$$4k^2 - 20k + 16 > 0$$

($\div 4$)

$$k^2 - 5k + 4 > 0$$

b) $(k-4)(k-1) > 0$

