

## Routine Other Solving Practice #2

Solve:

1.  $12 + 2x < 11$

2.  $11x - 12 > -9$

3.  $5x - 5 < 2x - 7$

4.  $10(x + 4) < -3$

5.  $10x + 12 > -4$

6.  $11x - 5 > 3x + 6$

7.  $3(x - 12) < 3$

8.  $4(2 + x) > -5$

9.  $4 - 9x > -9$

10.  $6x - 11 < 12x + 6$

11.  $(x + 3)(x + 11) = 0$

12.  $x^2 + 16x + 63 = 0$

13.  $(x + 2)(x + 8) = 0$

14.  $x^2 - 6x + 9 = 0$

15.  $(x - 2)(x - 3) = 0$

16.  $x^2 + 4x - 21 = 0$

17.  $(x + 2)^2 = 0$

18.  $x^2 + 7x = 18$

19.  $x^2 + 2x = 24$

20.  $x^2 = 10x + 24$

## Answers: Routine Other Solving Practice #2

Solve:

- |     |                     |                      |                   |                              |
|-----|---------------------|----------------------|-------------------|------------------------------|
| 1.  | $12 + 2x < 11$      | $2x < 11 - 12$       | $x < -1 \div 2$   | $x < -0.5$ or $^{-1}/_2$     |
| 2.  | $11x - 12 > -9$     | $11x > -9 + 12$      | $x > 3 \div 11$   | $x > 0.273$ or $^3/_11$      |
| 3.  | $5x - 5 < 2x - 7$   | $5x - 2x - 5 < -7$   | $3x < -7 + 5$     | $x < -0.667$ or $^{-2}/_3$   |
| 4.  | $10(x + 4) < -3$    | $10x + 40 < -3$      | $10x < -3 - 40$   | $x < -4.3$ or $^{-43}/_{10}$ |
| 5.  | $10x + 12 > -4$     | $10x > -4 - 12$      | $x > -16 \div 10$ | $x > -1.6$ or $^{-8}/_5$     |
| 6.  | $11x - 5 > 3x + 6$  | $11x - 3x - 5 > 6$   | $8x > 6 + 5$      | $x > 1.375$ or $^{11}/_8$    |
| 7.  | $3(x - 12) < 3$     | $3x - 36 < 3$        | $3x < 3 + 36$     | $x < 13$                     |
| 8.  | $4(2 + x) > -5$     | $8 + 4x > -5$        | $4x > -5 - 8$     | $x > -3.25$ or $^{-13}/_4$   |
| 9.  | $4 - 9x > -9$       | $4 > -9 + 9x$        | $4 + 9 > 9x$      | $x < 1.444$ or $^{13}/_9$    |
| 10. | $6x - 11 < 12x + 6$ | $-11 < 12x - 6x + 6$ | $-11 - 6 < 6x$    | $x > -2.83$ or $^{-17}/_6$   |

Note that steps are chosen to always avoid negative multipliers of  $x$ .

Some intermediate steps have been left out for reasons of room.

- |     |                       |                      |  |
|-----|-----------------------|----------------------|--|
| 11. | $(x + 3)(x + 11) = 0$ |                      | $x = -3$ or $x = -11$                      |
| 12. | $x^2 + 16x + 63 = 0$  | $(x + 9)(x + 7) = 0$ | $x = -7$ or $x = -9$                       |
| 13. | $(x + 2)(x + 8) = 0$  |                      | $x = -2$ or $x = -8$                       |
| 14. | $x^2 - 6x + 9 = 0$    | $(x - 3)(x - 3) = 0$ | $x = 3$                                    |
| 15. | $(x - 2)(x - 3) = 0$  |                      | $x = 2$ or $x = 3$                         |
| 16. | $x^2 + 4x - 21 = 0$   | $(x - 3)(x + 7) = 0$ | $x = -7$ or $x = 3$                        |
| 17. | $(x + 2)^2 = 0$       |                      | $x = -2$                                   |
| 18. | $x^2 + 7x = 18$       | $x^2 + 7x - 18 = 0$  | $(x + 9)(x - 2) = 0$ $x = 2$ or $x = -9$   |
| 19. | $x^2 + 2x = 24$       | $x^2 + 2x - 24 = 0$  | $(x + 4)(x - 6) = 0$ $x = -6$ or $x = 4$   |
| 20. | $x^2 = 10x + 24$      | $x^2 - 10x - 24 = 0$ | $(x + 2)(x - 12) = 0$ $x = -2$ or $x = 12$ |

Quadratic solutions must have **both** answers.