Routine Other Solving Practice #3

Solve:

1. $9(3 + x) > {}^{-}11$

2. $4 - 9x < {}^{-}8$

3. $8x - 5 < {}^{-}6$

4. $12x - 3 > 7x + 11$

5. $59 - 3x < 11$

6. $2x - 6 > 8$

7. $9(x + 3) < {}^{-}9$

8. $6 - 5x > 3$

9. $6x - 11 > 14x$

10. $1 - 8x < 10$

11. $(x - 7)(x + 5) = 0$

12. $x^2 + 21x + 108 = 0$

13. $x^2 + 8x + 7 = 0$

14. $x^2 - 13x + 12 = 0$

15. $(x + 5)(x + 6) = 0$

16. $x^2 + 8x + 15 = 0$

17. $x^2 = 8x - 15$

18. $x^2 = 10x - 16$

19. $x^2 + 5x - 24 = 0$

20. $x^2 + x = 30$

Answers: Routine Other Solving Practice #3

Solve:

1. $9(3 + x) > ^-11$ $27 + 9x > ^-11$ $9x > ^-11 - 27$ $x > ^-4.222$ or $^{-37}/_9$

2. $4 - 9x < ^-8$ $4 < ^-8 + 9x$ $4 + 8 < 9x$ $x > 1.333$ or $^4/_3$

3. $8x - 5 < ^-6$ $8x < ^-6 + 5$ $x < ^-1 \div 8$ $x < ^-0.125$ or $^{-1}/_8$

4. $12x - 3 > 7x + 11$ $12x - 7x - 3 > 11$ $5x > 11 + 3$ $x > 2.8$ or $^{14}/_5$

5. $59 - 3x < 11$ $59 < 11 + 3x$ $59 - 11 < 3x$ $x < 16$

6. $2x - 6 > 8$ $2x > 8 + 6$ $x > 14 \div 2$ $x > 7$

7. $9(x + 3) < ^-9$ $9x + 27 < ^-9$ $9x < ^-9 - 27$ $x < ^-4$

8. $6 - 5x > 3$ $6 > 3 + 5x$ $6 - 3 > 5x$ $x < 0.6$ or $^3/_5$

9. $6x - 11 > 14x$ $^-11 > 14x - 6x$ $^-11 > 8x$ $x < ^-1.375$ or $^{-11}/_8$

10. $1 - 8x < 10$ $1 < 10 + 8x$ $1 - 10 < 8x$ $x > ^-1.125$ or $^{-9}/_8$

Note that steps are chosen to always avoid negative multipliers of *x*.
Some intermediate steps have been left out for reasons of room.

11. $(x - 7)(x + 5) = 0$ $x = 7$ or $x = ^-5$

12. $x^2 + 21x + 108 = 0$ $(x + 12)(x + 9) = 0$ $x = ^-12$ or $x = ^-9$

13. $x^2 + 8x + 7 = 0$ $(x + 7)(x + 1) = 0$ $x = ^-1$ or $x = ^-7$

14. $x^2 - 13x + 12 = 0$ $(x - 1)(x - 12) = 0$ $x = 1$ or $x = 12$

15. $(x + 5)(x + 6) = 0$ $x = ^-5$ or $x = ^-6$

16. $x^2 + 8x + 15 = 0$ $(x + 3)(x + 5) = 0$ $x = ^-5$ or $x = ^-3$

17. $x^2 = 8x - 15$ $x^2 - 8x + 15 = 0$ $(x - 3)(x - 5) = 0$ $x = 3$ or $x = 5$

18. $x^2 = 10x - 16$ $x^2 - 10x + 16 = 0$ $(x - 8)(x - 2) = 0$ $x = 8$ or $x = 2$

19. $x^2 + 5x - 24 = 0$ $(x - 3)(x + 8) = 0$ $x = ^-8$ or $x = 3$

20. $x^2 + x = 30$ $x^2 + x - 30 = 0$ $(x - 5)(x + 6) = 0$ $x = ^-6$ or $x = 5$

Quadratic solutions must have **both** answers.