TMT Equation 20 ACT Prep V1

1. Solve for y in terms of x: $3x + 2y = 5x - 11$

2. Solve for x: $4(x - 3) = 2 + 4x - 14$

3. Solve for x: $4x - 8 = 2x + 8 + 2x$

4. Write and solve the following:
   A number tripled and added to 7 is equivalent to increasing 4 times the number by 4.

5. Solve for x: $\log_2 x = 6$

6. Solve for x. Keep in logarithmic form:
   $3^x = 11$

7. Use substitution to solve for x and y:
   $\begin{cases} 2x + 3y = 23 \\ x + 2y = 14 \end{cases}$

8. Using elimination, solve for x and y:
   $\begin{cases} 3x + 2y = 8 \\ 5x + y = 11 \end{cases}$

9. Solve for x in terms of a: $2x - ax = 14$

10. Solve for x: $x^2 + 5x + 4 = 0$

11. Solve for x: $x^2 + 4x + 1 = 0$

12. Solve for x: $\frac{4}{x} + 2 = \frac{1}{3}$

13. Solve for l in terms of p and w: $p = 2l + 2w$

14. Solve for x: $3^x = 27^{4x-1}$
    (hint: get the bases the same)

15. Solve for x: $|x - 4| = 12$

16. Solve for x: $2(x + 1)^2 - 4 = 4$

17. Solve for x: $x^3 + 4x^2 - 2x = 8$

18. Write and solve the exponential equation:
    Bob gets 5% annual interest. His initial investment of $1,000 has grown to $1,050. How many years did this take?

19. Write and the solve the system of equations:
    Andre's lawn mowing business charges $25 to drive out and then $10 per hour. Carol's business charges $20 per hour with no additional costs. At what number of hours will it cost the same to hire either person?

20. Solve for x: $-2x - 5 < 9$