

# Practice Test for Modeling with Expressions and Equations Unit

**Learning Objectives:**

- A. Simplify expressions
- B. Model with expressions.
- C. Solve multi-step equations.
- D. Solve equations with infinite or no solutions.
- E. Model with equations.
- F. Solve equations graphically.
- G. Represent inequalities using a number line and interval notation.
- H. Solve inequalities.
- I. Model inequalities.
- J. Solve conjunctions.
- K. Model with conjunctions.
- L. Solve disjunctions.
- M. Model with disjunctions.

Question #	Learning Objective	Know It	Feel Unsure	Right	Wrong	Simple Mistake	Need to Study
1	A						
2	B						
3	B						
4	C						
5	D						
6	E						
7	F						
8	G, K						
9	H						
10	I						
11	J						
12	K						
13	L						
14	M						

1. Simplify this expression:  $2 + 3(2x - 4) - 4(x + 7)$
2. Draw an area model of:  $5(x - 2) + 7(2x + 1)$
3. a) Write an expression to represent: Olivia has \$70. She makes \$20 each week through babysitting.  
b) How much money will she have in 5 weeks?  
c) How long will it take her to make \$200?
4. Solve:  $5(x - 2) + 4(x + 7) = 2 + 3(2x - 1) + 4x$
5. a) Write an example of an equation with no solution.  
b) Write an example of an equation with infinite solutions.
6. Eric is writing a novel. His goal is 500 pages. He currently has 64 pages written and he averages 15 pages per week. How long will it take him to write his novel?
7. a) Explain how you know find the solution of an equation using a graph.  
b) Here is the graph of both sides of the equation  $x^2 - 4 = x - 2$ . What is the solution(s)?
8. Jesus drives no more than 100 miles per week. Model this using an inequality, interval notation and a number line.
9. Solve and graph on a number line:  $3(4 - x) > 12x + 34 - 5x$ .
10. Your elementary school is having a fall carnival. Admission into the carnival is \$3 and each game inside the carnival costs \$.25. Write an inequality that represents the possible number of games that can be played having \$10. What is the range of games that can be played?
11. Solve and graph:  $-4 < 2x - 6 \leq 14$ .
12. David spends on average \$45 each time he fills his cars and he fills up between 2 and 5 times per month. Write an inequality that represent the money he spends on gas per month.
13. Solve and graph:  $3 - 5x < 28$  or  $3x + 7 \leq 21$ .
14. A ride at an amusement park says that people must be a minimum of 36 inches tall but no more than 60 inches tall. Write an inequality that represents the height that people CANNOT be to ride the ride.

