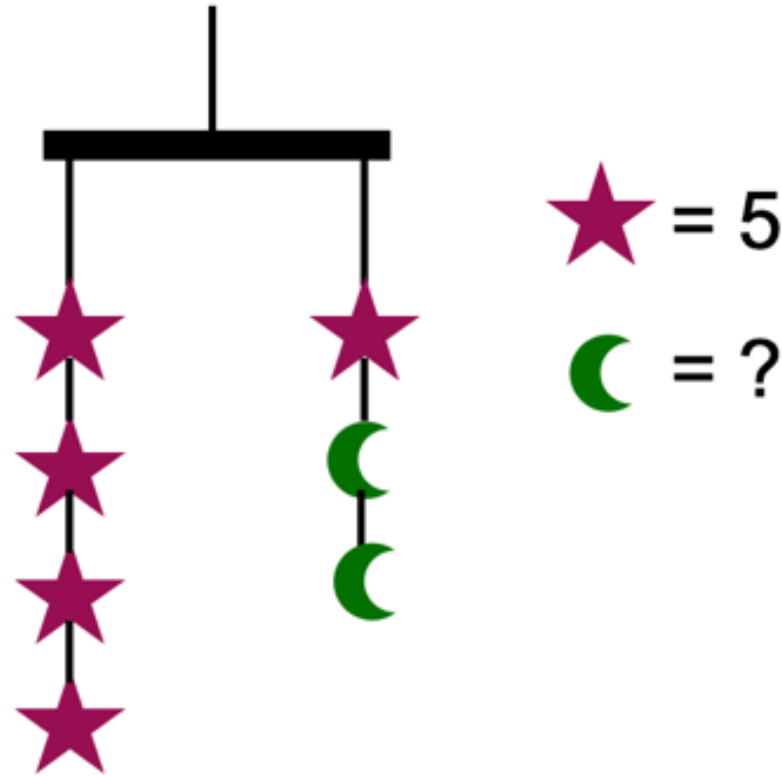




COASTMETRO
ELEMENTARY MATH PROJECT

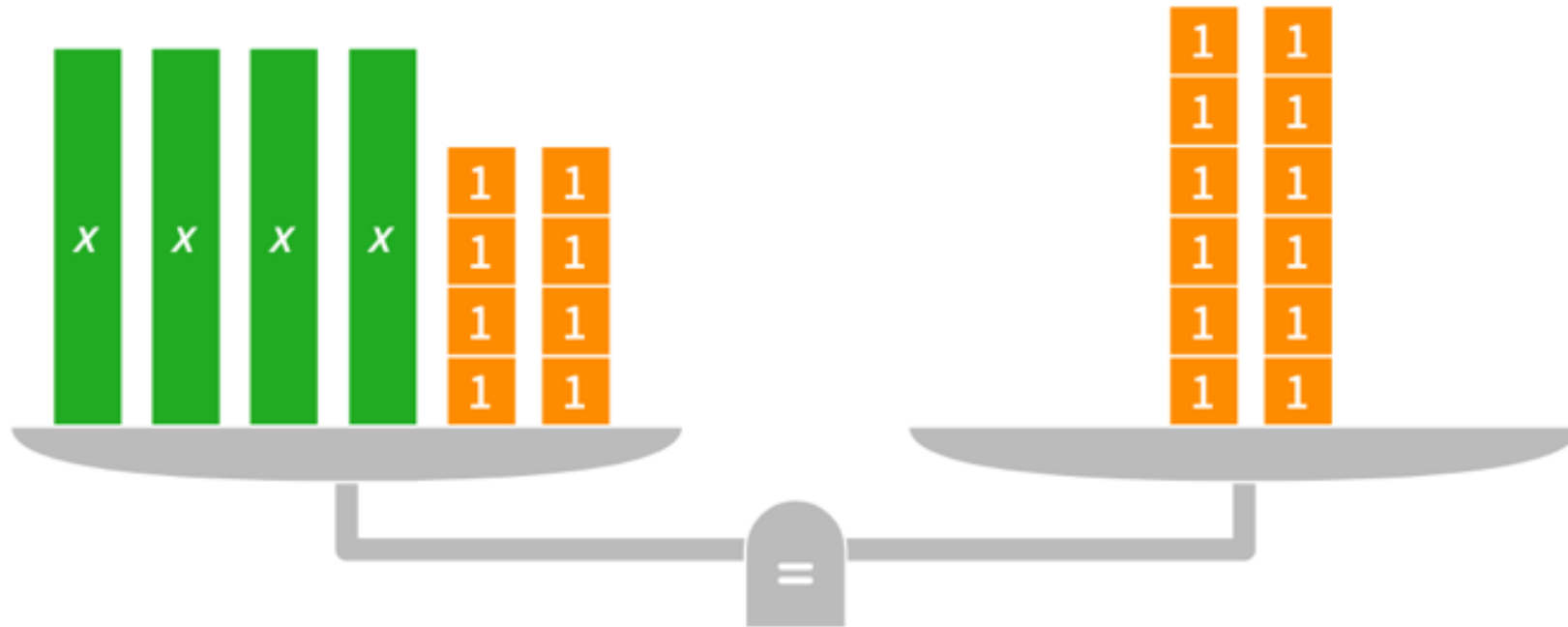
GRADE 7 PRACTICE QUESTIONS
TWO-STEP EQUATIONS

1. Use an algebraic equation to determine the value of the crescent moon. Show your thinking.

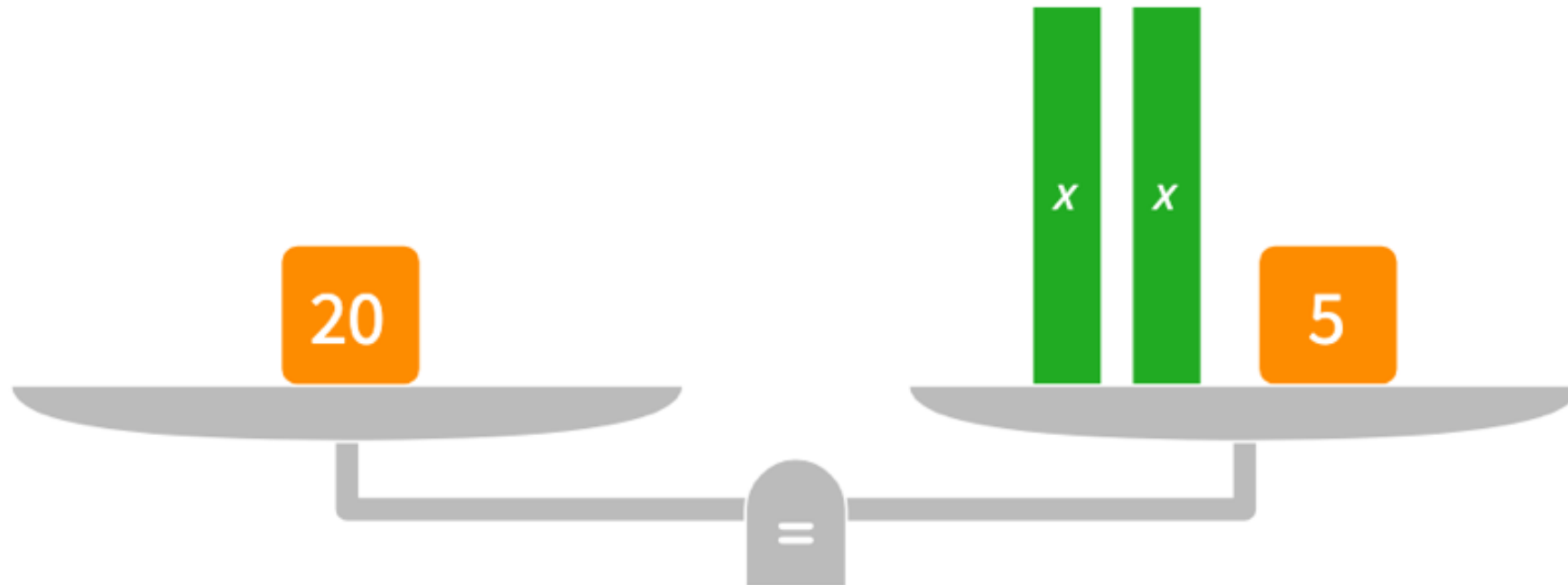


2. Draw a picture to model the equation $-3x + 7 = 19$, using algebra tiles.

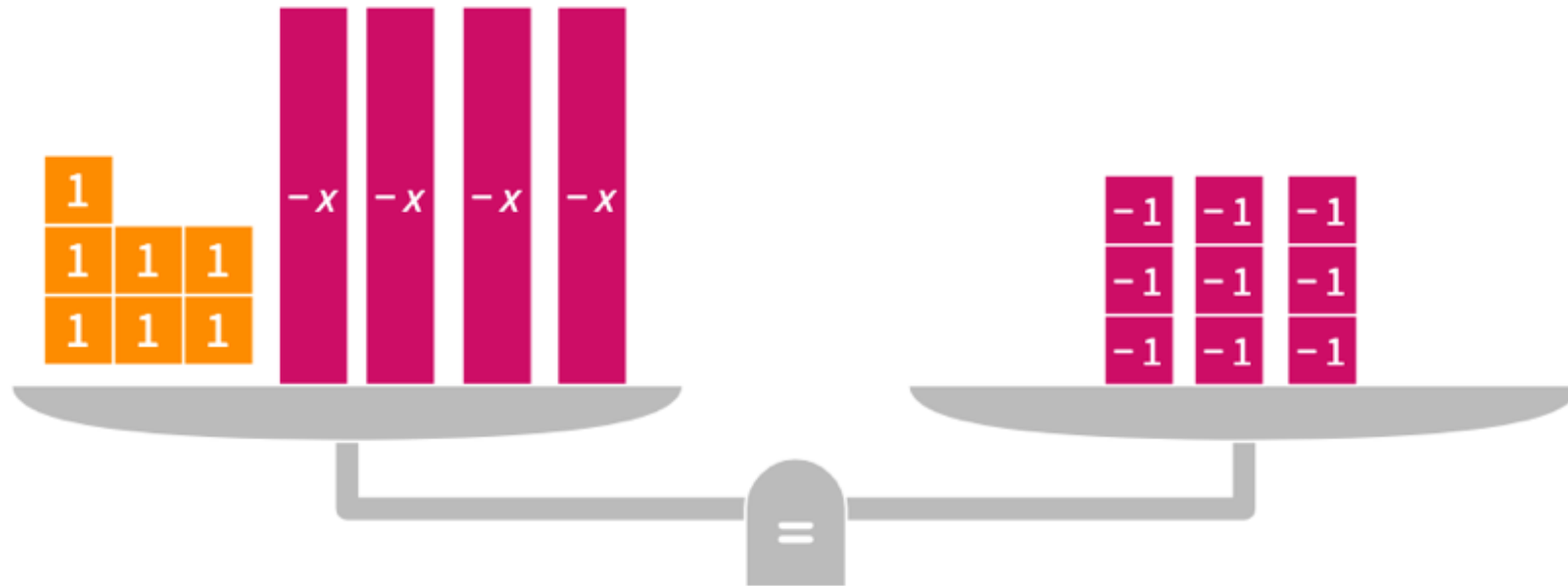
3a. Solve the equation modelled by each balance scale. Show your thinking using pictures and numbers.



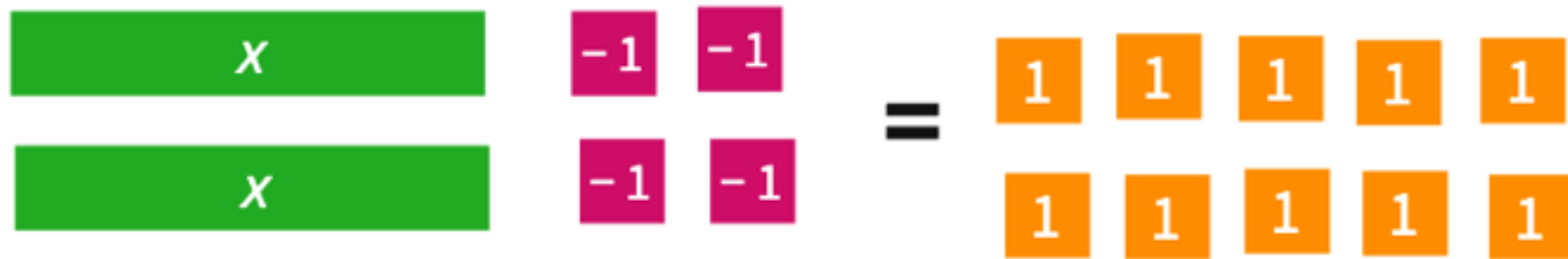
3b. Solve the equation modelled by each balance scale. Show your thinking using pictures and numbers.



3c. Solve the equation modelled by each balance scale. Show your thinking using pictures and numbers.

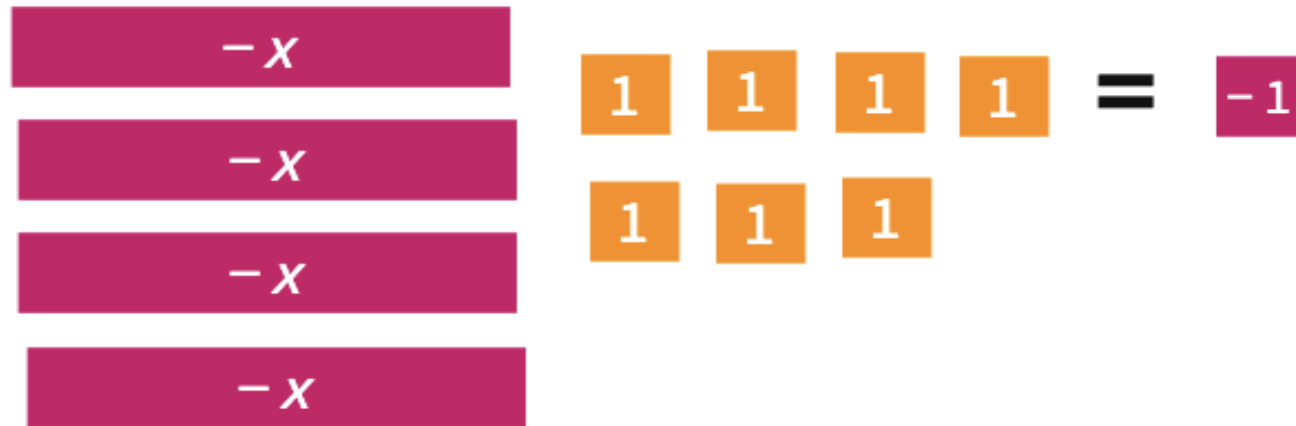


4a. Use algebra tiles to solve the equations. Check each solution using symbols.



The diagram illustrates the equation $2x - 4 = 10$ using algebra tiles. On the left side, there are two green horizontal rectangles, each labeled with the variable x , representing $2x$. To the right of these are four pink squares, each labeled -1 , representing -4 . An equals sign follows. On the right side of the equals sign, there are ten orange squares, each labeled 1 , arranged in two rows of five, representing 10 .

4b. Use algebra tiles to solve the equations. Check each solution using symbols.



The diagram shows algebra tiles representing the equation $-4x = 7$. On the left, there are four horizontal purple rectangular tiles, each labeled $-x$. On the right, there are seven small orange square tiles, each labeled 1 , arranged in two rows: the top row has four tiles and the bottom row has three tiles. An equals sign is placed between the two sides, followed by a single purple square tile labeled -1 .

4c. Use algebra tiles to solve the equations. Check each solution using symbols.



The diagram shows an equation represented by algebra tiles. On the left side, there are six purple tiles, each labeled with the number -1, arranged in two rows of three. This represents the number -6. An equals sign (=) is placed between the two sides. On the right side, there are two green tiles, each labeled with the letter x, arranged in two rows of one. This represents the term 2x. To the right of the green tiles are eight orange tiles, each labeled with the number 1, arranged in two rows of four. This represents the constant term +4. The entire arrangement represents the equation $-6 = 2x + 4$.

5. Show whether $x = -5$ is the solution to each equation.

a) $-6x + 4 = 34$

b) $3 - 8x = 43$

c) $27 = -9x - 18$

d) $40 = 5x + 65$

6. What is the first operation you should perform to solve each equation. Share your thinking.

a) $2x - 2 = 16$

b) $9 - 9y = -27$

c) $71 = -9x - 1$

7. Use inverse operations to solve the equations. Show your steps and check your solutions.

a) $6x - 4 = -32$

b) $22 = -5x - 3$

c) $-30 = 7x - 9$

8. Use inverse operations to solve the equations. Show your steps and check your solutions.

$$\frac{x}{5} - 7 = 1$$

$$\frac{y}{-3} + 4 = -6$$

9. Create word sentences.

Word Sentence	Equation
Three times a number plus two is ten.	$3x + 2 = 10$
	$3x = 9$
	$2x + 4 = 10$
	$9 = 5x - 27$
	$7 + 4x = 12$

10.

ADD EM UP: TWO STEP EQUATIONS

$-16 - 5x = -16$	$7x + 2 = 23$
$48 = 45 - \frac{x}{6}$	$6x - 11 = -23$

SUM:

11. You write the equation $4x - 5 = 15$ to solve a word problem. What might the word problem be?

12. TWO-STEP EQUATIONS: POSITIVE AND NEGATIVE VALUES

Directions: Using the digits 1 to 9 at most one time each, place a digit in each box to create two equations: one where x has a positive value and one where x has a negative value. You may reuse all the digits for each equation.

$$\boxed{}x + \boxed{} = \boxed{}$$

1. How many laps did the players run if the coach told them to run nine less than six times the number of laps they ran yesterday, and that total was 15?

2. Lilly has two more than three times as many candies as Max. If she has 17 candies, how many does Max have?

3. How many pencils are there if, five times the number of pencils plus nine equals thirty-four.

4. If Marcus triples the amount of money he has now, and then spends \$75, he will have just enough left to buy a new laptop that costs \$450. Write and solve an equation to determine how much money Marcus has now.

5. If a number is doubled and five is subtracted from the product, the result is nine. What is the number?