


13. You could have created an equation to represent many of the problems on the previous page. For example, in #2, you were asked:

What value for x makes the expression $x + 5$ equal to 7? In other words, when does the expression $x + 5$ equal 7? An **equation** is formed by setting two expressions equal to each other.

“is equal to”


$$\underbrace{x + 5}_{\text{Expression 1}} = \underbrace{7}_{\text{Expression 2}}$$

A **solution** to an equation is a number that makes the equation true when substituted for the unknown. Another way to think of this is to ask the question, “For what value of x does the expression $x + 5$ evaluate to 7?”

Directions: Determine whether the given number is the solution to the equation given. Justify your answer.

14. $x + 8 = 15$ Does $x = 7$?	15. $x - 2 = 9$ Does $x = 7$?	16. $3x = 24$ Does $x = 8$?
17. $8x = 4$ Does $x = \frac{1}{2}$?	18. $\frac{x}{2} = 12$ Does $x = 6$?	19. $25 - x = 19$ Does $x = 6$?
20. $\frac{42}{x} = 6$ Does $x = 7$?	21. $x + \frac{2}{3} = 2\frac{1}{6}$ Does $x = 1\frac{1}{2}$?	22. $50x = 5$ Does $x = 10$?
23. $12 = x + 8$ Does $x = 4$?	24. $35 = 5x$ Does $x = 30$?	25. $1 = x - 9$ Does $x = 10$?

Directions: Solve the following equations using mental math. Justify your answer.



26. $x + 10 = 14$	27. $x - 5 = 3$	28. $4x = 20$
29. $\frac{x}{7} = 3$	30. $\frac{40}{x} = 5$	31. $7 + x = 15$
32. $9 - x = 8$	33. $49 = 7x$	34. $3 = \frac{x}{5}$
35. $x + \frac{1}{2} = \frac{5}{2}$	36. $0.1x = 10$	37. $\frac{1}{4}x = 6$

Spiral Review

1. Simplify the expression. If the expression is already simplified, write “already simplified”.

a. $m + m + m + m$	b. $4x + 5x + x$
c. $5x + 5y$	d. $4x + 8 + x - 3$

2. Evaluate each expression for $x = 5$.

a. $3x$	b. $3 + x$
c. x^3	d. $2x^3$

3. I am thinking of a number. When I divide the number by 3, I get 15. What is the number?

4. After Mario paid \$2.75 for school lunch, he had \$1.25 left. How much money did Mario have before he paid for school lunch.