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Name _____

SKILLS ASSESSMENT

1.
$$\begin{array}{r} 69 \\ + 87 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 4008 \\ + 209 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 357 \\ 898 \\ + 76 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 28.2 \\ + 97.9 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 98.2 \\ - 76.9 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 379 \\ - 98 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 341 \\ - 57 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 506 \\ - 47 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 57 \\ \times 8 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 7.9 \\ \times 1.5 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 37 \\ \times 86 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 327 \\ \times 189 \\ \hline \end{array}$$

13. $276.3 + 37 = \underline{\hspace{2cm}}$

14. $326 - 78.5 = \underline{\hspace{2cm}}$

15. $576 + 157.3 = \underline{\hspace{2cm}}$



Solve for n:

16. $\frac{5}{8} = \frac{n}{72}$

17. $\frac{5}{6} = \frac{n}{24}$

18. $\frac{7}{8} = \frac{n}{56}$

19. $9 \overline{) 630}$

20. $8 \overline{) 57.6}$

21. $1.8 \overline{) 396}$

22. 10% of 500 = _____

23. 20% of 300 = _____

24. 1% of 300 = _____

25.
$$\begin{array}{r} 4\frac{7}{8} \\ + 5\frac{1}{3} \\ \hline \end{array}$$

26.
$$\begin{array}{r} 8\frac{3}{4} \\ - 2\frac{7}{8} \\ \hline \end{array}$$

27. $\frac{5}{6} \times 3\frac{7}{10} =$

Change to decimals:

28. $4\frac{1}{7} \div \frac{3}{14} =$

29. $\frac{5}{6} =$

30. $\frac{3}{16} =$

LESSON PLAN 2: CONCEPT OF AN INTEGER & ADDING INTEGERS

OBJECTIVES:

1. Teach the concept of an integer.
2. Give examples of integers.
3. Define *integers*.
4. Teach addition of integers.

MATERIALS:

Wall Chart 1, Integers, page 21.
Activity Page, "Integer Number Lines," page 22.
Worksheet A, "Adding Integers with Like Signs," page 23.
Wall Chart 2, "Adding Integers with Unlike Signs," page 24.
Worksheet B, "Adding Integers with Unlike Signs," page 25.
Worksheet C, "Integer Addition Practice," page 26.
Worksheet D, "More Integer Addition Practice," page 27.
Game, Speed Integers, page 28.
Game, Algebra Dice Roll, pages 29-31.

CLASSROOM PRESENTATION:

INTEGERS: In studying algebra, students need to work with integers. Integers include zero, positive whole numbers and their negatives. Students have been working with positive whole numbers since kindergarten or before. They just did not have a positive sign to the left. Any number with no sign could have a positive sign. Thus:

1, 2, 3, 4, 5, 6 . . . could now be written +1, +2, +3, +4, +5, +6, . . .

Ask students when people need negative numbers—numbers less than zero. Some examples are: winter temperature drops below zero, a submarine is below sea level, a person is overdrawn on a checking account, a football team loses yards or you spend money. Remember that an integer has two parts: the sign (positive or negative) and the numeral. (See Wall Chart 1, page 21.) The sign tells which way to move on the number line and the numeral tells how far to move. (You may enlarge and laminate Wall Chart 1 or make a copy for each student, or simply use the information in your presentation.) Demonstrate +5 and -5 on the board using a number line.



ADDING POSITIVE PLUS POSITIVE:

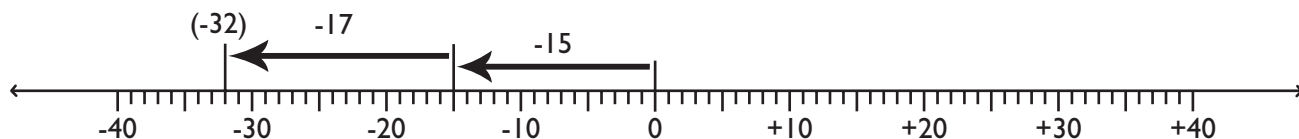
We now know that $8 + 7 = 15$ could be written $+8 + (+7) = +15$. (Demonstrate this on a number line if necessary.)

So when you add two positive numbers, the answer is positive.

LESSON PLAN 2: CONTINUED

ADDING NEGATIVE PLUS NEGATIVE: Example 1: If you check the temperature at noon and by 1:00 it has dropped 10 degrees and by 2:00 it has dropped another 8 degrees, what is the total drop in temperature? The total drop is 18 degrees. So, $-10 + (-8) = -18$.

Example 2: You spend \$15 or (-15) at the food court and \$17 or (-17) at the movies. How much have you spent in all? $-15 + (-17) = -32$. (Note: Always start the first arrow at zero.)



So adding two negative numbers always gives a negative answer.

(Give each student the Activity Page, "Integer Number Lines," page 22. As an option, give each one a vinyl page protector and dry-erase maker. Give students problems and have them find them on the number lines.)

Sample problems:

$$+9 + (+8) = ? \quad +17$$

$$-25 + (-17) = ? \quad -42$$

$$+110 + (+80) = ? \quad +190$$

$$-400 + (-700) = ? \quad -1100$$

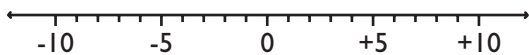
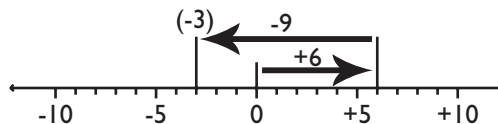
ASSIGNMENT: Worksheet A, page 23. Accept answers such as 5 or +5 since both mean the same thing.



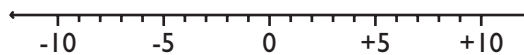
ADDING INTEGERS WITH UNLIKE SIGNS

1. Draw arrows along each number line to find the answers.

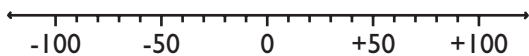
Example: $+6 + (-9) = -3$



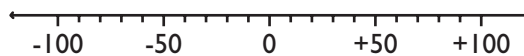
a. $+8 + (-12) =$ _____



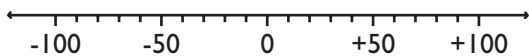
b. $-9 + (+8) =$ _____



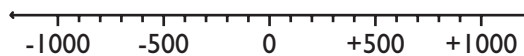
c. $+80 + (-120) =$ _____



d. $-75 + (+20) =$ _____



e. $+20 + (-30) =$ _____



f. $-400 + (+600) =$ _____

2. REVIEW.

a. $+5 + (+18) =$ _____

b. $-21 + (-33) =$ _____

c. $-28 + (-35) =$ _____

d. $+123 + (+343) =$ _____

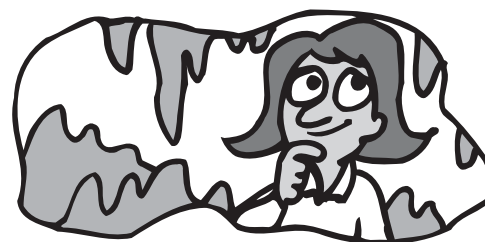
e. $-175 + (-125) =$ _____

f. $-324 + (-476) =$ _____

3. Write the rule for adding one positive and one negative integer.

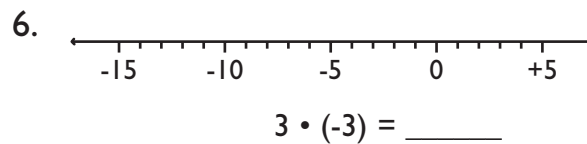
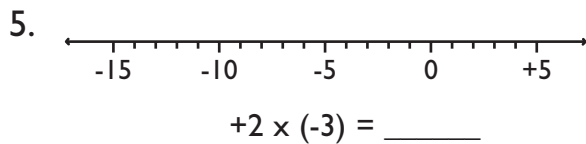
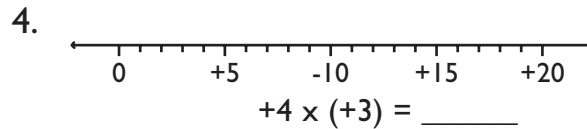
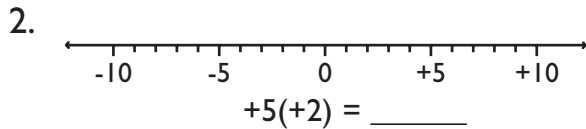
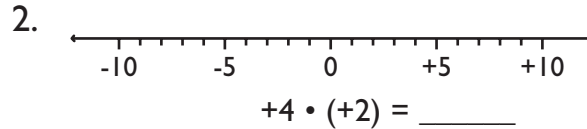
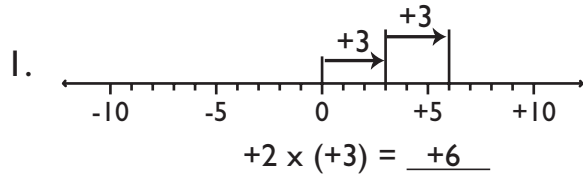
CHALLENGE:

You are in New Mexico's Carlsbad Caverns. You descend to the "big room," 754 feet below the surface. The guide says the next room is 95 feet higher than the "big room" and your next stop is 65 feet higher than room two. Now how far below the surface are you? _____



MULTIPLYING INTEGERS

Show each problem on the number line.



7. $+5 \times (+6) = \underline{\hspace{2cm}}$

8. $+4 \times (-6) = \underline{\hspace{2cm}}$

9. $-3 \times (+4) = \underline{\hspace{2cm}}$

10. $-8 \cdot (+7) = \underline{\hspace{2cm}}$

11. $13 \cdot 15 = \underline{\hspace{2cm}}$

12. $-10(17) = \underline{\hspace{2cm}}$

13. $-9(81) = \underline{\hspace{2cm}}$

14. $16(-12) = \underline{\hspace{2cm}}$

15. $23 \times (-40) = \underline{\hspace{2cm}}$

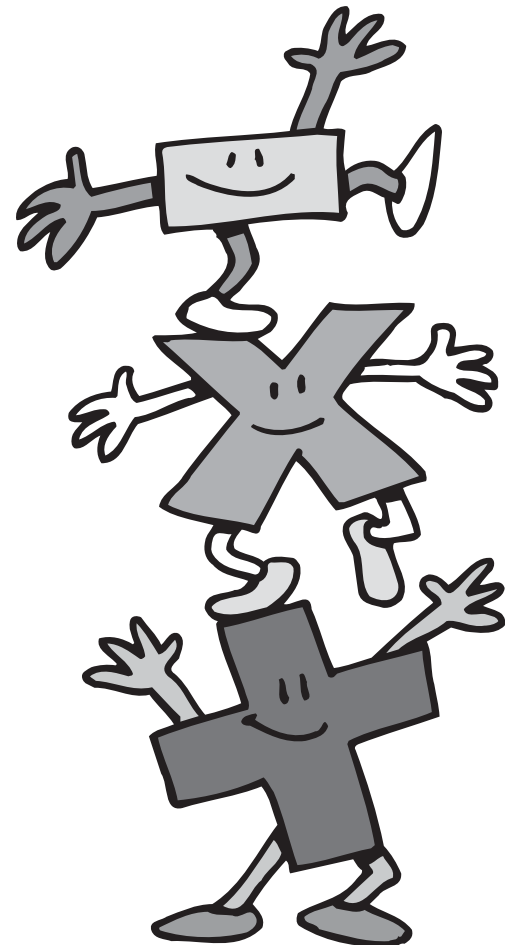
16. $-12(8) = \underline{\hspace{2cm}}$

17. $-13(9) = \underline{\hspace{2cm}}$

18. $17(21) = \underline{\hspace{2cm}}$

19. $-215(+86) = \underline{\hspace{2cm}}$

20. $(-19) \cdot (+163) = \underline{\hspace{2cm}}$



EQUATIONS—ADD OR SUBTRACT

1. Solve and check.

a. $a + 7 = 15$

b. $y - 4 = 2$

c. $p + 3 = 12$

d. $r - 9 = 7$

e. $c + 39 = 43$

f. $a - 18 = 16$

g. $x + 19 = 37$

h. $n - 17 = 15$

i. $a + 29 = 43$

2. Collect like terms. Solve and check.

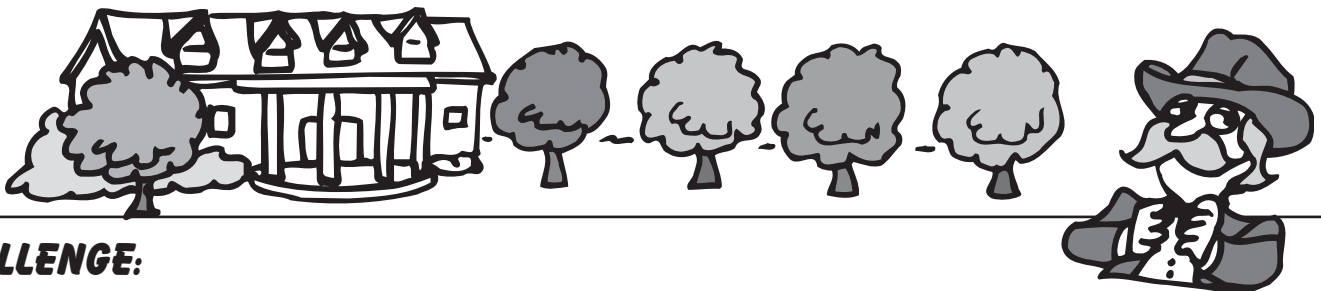
a. $2n - n = 21 - 15$

b. $2y - y = -6 + 24$

c. $2b - b + 4 = 18$

d. $4x - 3x = 35 + (-16)$

3. Write an equation. Solve and check.

a. The number 6 is n less than 15. Equation: _____b. Three less than a number x is equal to 29. Equation: _____c. A number b decreased by seventeen is thirty-one. Equation: _____**CHALLENGE:**

Natchez, Mississippi, is the home to many luxurious mansions built by cotton growers. In fact, there are nearly $2^2 \cdot 5^3$ of them. Write that number in standard form and scientific notation.

Scientific Notation: _____

Standard Form: _____