

## Math 7H - Unit 2a

## Day 7 - Evaluating Linear Expressions

## Lesson Objectives:

- I can substitute different values to evaluate linear expressions.

The substitution property of equality says, if  $a = b$ , then  $b$  may be substituted for  $a$  in any expression containing  $a$ .

Sub. prop. (=)

To evaluate an algebraic expression substitute a number for each variable in the algebraic expression. Then use the order of operations to find the value of the numerical expression.

Evaluate  $3x + 5$  when  $x = 6$ .

$$3x + 5 = 3(6) + 5 = 18 + 5 = 23$$

Evaluate each expression if  $d = 8$ ,  $e = 3$ ,  $f = 4$ , and  $g = -1$ .

1.  $2(d + 9)$

$$2(8 + 9) \\ = 2(17) \\ = 34$$

2.  $4f + d$

$$4(4) + 8 \\ = 16 + 8 \\ = 24$$

3.  $e^2 + 7$

$$3^2 + 7 \\ = 9 + 7 \\ = 16$$

4.  $\frac{d}{4}$

$$\frac{8}{4} = 2$$

5.  $\frac{2g}{2}$

$$\frac{2(-1)}{2} = -1$$

6.  $\frac{5d - 25}{5}$

$$\frac{5(8) - 25}{5} \\ = \frac{40 - 25}{5} = \frac{15}{5} = 3$$

Evaluate each expression if  $x = 3.2$ ,  $y = 6.1$ , and  $z = 0.2$ .

7.  $x + y + z$

$$3.2 + 6.1 + 0.2 \\ = 9.5$$

8.  $14.6 - (x + y + z)$

$$14.6 - (3.2 + 6.1 + 0.2) \\ = 14.6 - 9.5 \\ = 5.1$$

9.  $xz + y^2$

$$(3.2)(0.2) + 6.1^2 \\ = 0.64 + 37.21 \\ = 37.85$$

Evaluate each expression if  $m = \frac{1}{2}$ ,  $n = -\frac{5}{6}$ , and  $p = \frac{3}{4}$ .

10.  $3m + 4p$

$$3\left(\frac{1}{2}\right) + 4\left(\frac{3}{4}\right) \\ = \frac{3}{2} + 3 \\ = \frac{3}{2} + \frac{6}{2} = \frac{9}{2} = 4\frac{1}{2}$$

11.  $n^2 + 5$

$$\left(-\frac{5}{6}\right)^2 + 5 \\ = \frac{25}{36} + 5 = 5\frac{25}{36}$$

12.  $6p^3$

$$6\left(\frac{3}{4}\right)^3 \\ = \frac{36}{1} \left(\frac{27}{64}\right) = \frac{81}{16}$$

Homework

## Evaluate Linear Expressions WKS

## \* Individual Think Time \*

What to do if you get stuck...

- Reread the problem. Did you write it down correctly?
- Reread your notes. Is there a problem similar that we did together in class?
- Find a problem similar in your book. Try this one to see if it helps.
- Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

