# Connections to Algebra

## 1.1 - Variables in Algebra
## 1.2 - Exponents & Powers
## 1.3 - Order of Operation

**A variable is a letter that represents one or more numbers. Replace the variable in an expression is called substitution. The resulting number is the value of the expression.**

**Write the variable expression → Subsititute values for variables → Simplify the numerical expression.**

**Formulas!**
**Distance = Rate (x) Time**
**Simple Interest = Principal (x) Rate in decimal (x) Time in years**

$D = RT$

$I = PRT$

**Evaluate the expression when y=6**

**1)** $5y$ $\qquad$ $\frac{24}{y}$ $\qquad$ **2)3)** $y + 19$ $\qquad$ **4)** $y-2$

**5) You invest $80 at a simple interest rate of 2%. What would be your account balance after 1.5 years?**

$I = PRT$

$I = 80 \cdot .02 \cdot 1.5$

$I = 2.40 + 80$

$82.40$

**Evaluate when x=3**

**6)** $x^2$

**7)** $2x^3$

$2 \cdot 3^3$

$3^3$

$6$ or $2 \cdot 27$

$54$

**8)** $(3x)^4$

$(3 \cdot 3)^4$

$9^4$

$6^4$

$36$

$216$

$81 \cdot 81 = 6561$

**9)** $14x - y^2$ **When x=1.5 and y=3**

$14 \cdot 1.5 - 3^2$

$14 \cdot 1.5 - 9$

$21 - 9 = 12$

**10)** $(7x - 8)^2$ **When x=1.3**

$(7 \cdot 1.3 - 8)^2$

$(9.1 - 8)^2$

$1.1^2 =$

$1.1 \times 1.1 = 1.21$

11) $(\frac{1}{2}y)^2 - x^2$ **When x=3 and y=8**

$(\frac{1}{2} \cdot 8)^2$

$4^2 = 16 - 3^2 = 16 - 9 = 7$

12) $6 + z^4 \div z$ **When z=2**

$6 + 2^4 \div 2$

$6 + 16 \div 2$

$6 + 8 = 14$

**13)** $x^3 - \frac{y}{3} \bullet 4$ **When x=2 & y=6**

$2^3 - \frac{6}{3} \cdot 4$

$8 - \frac{6}{3} \cdot 4$

$8 - 2 \cdot 4$

$8 - 8 = 0$

**14)** $8 + 4^3 \div 8 - 3$

$8 + 64 \div 8 - 3$

$8 + 8 - 3$

$16 - 3 = 13$

**15)** $2\left[(9+5)-12\right]\div 4$

1

**16)** $3\left[2(13-9)+8\right]+2$

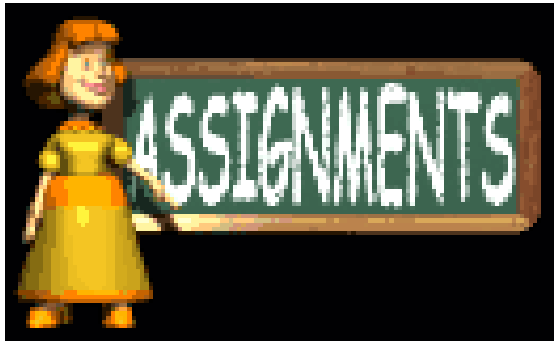
16

4

8

48+2

50




**Pg 6 #19-31 all**
**Pg 12 #26-46 all**
**Pg 19 #13-37 all!**

**Rules!**

**1) Write Question & Answers!**
**2) Calculators allowed unless I say otherwise!**
**3) I can't read minds...if you want help, show your work!**