

Name \_\_\_\_\_

class \_\_\_\_\_

**Rearranging Formulas**

Solve for the indicated variable and then fill in the table with the missing information.

**Formula to convert Fahrenheit to Celsius**

$$F = \frac{9}{5}C + 32, \text{ solve for } C$$

1.

C = \_\_\_\_\_

	F	C
3.	212	
4.	122	
5.	104	

**Equation of a line**

$$3x + -4y = 12, \text{ solve for } y$$

2.

y = \_\_\_\_\_

	x	y
6.	-4	
7.	12	
8.	24	

**Force of an object due to gravity**(w=weight, r= radius of the planet  
radius of the earth is 4000 miles)

$$F = \frac{16,000,000w}{r^2}, \text{ solve for } w$$

9.

w = \_\_\_\_\_

	F	w
11.	1,000	
12.	200	
13.	50	

**Speed of oil flowing through a pipe**

(r=radius of pipe, s=speed)

$$s = 8(10 - r^2), \text{ solve for } r^2$$

10.

$$r^2 = \underline{\hspace{2cm}}$$

	s	r <sup>2</sup>
14.	0	
15.	48	
16.	80	

**Doctor's formula to determine how much a partially clogged artery needs to be expanded to restore to normal flow [discovered in 1830's by Jean Poiseuille]**

(V=volume, r-radius, k=constant amount)

$$V = kr^4, \text{ solve for } r^4$$

17.

$$r^4 = \underline{\hspace{2cm}}$$

Use the given formulas to find the missing information:

**Damage to a crop due to insects**

(D=damage, t=days since insects infested originally)

$$D = \frac{t^2}{90} + \frac{t}{3}$$

**Potato consumption from 1970-1980**

(c=consumption in pounds, t=years)

$$c = 2.2 + 1.1t$$

**Automobile gas mileage**

(m=mileage, v=speed)

$$m = .00015v^3 - .032v^2 + 1.8v + 1.7$$

**Tylenol dosage for kids under 12**

(d=dosage, t=years)

$$D = \frac{750t}{t+12}$$

18. Which is more economical: a vehicle traveling at a speed of 60 mph or one traveling at a speed of 70 mph? \_\_\_\_\_ Why? \_\_\_\_\_
19. How much Tylenol should an 8 year old take? \_\_\_\_\_
20. How much damage will insects do to after infecting a field for 3 days? \_\_\_\_\_
21. How many pounds of potatoes were consumed for the first 3 years of the 1970's? \_\_\_\_\_