

Unit 4 - Using Equations to Solve Word Problems

Developing Formulas Section 7.10 Pages 371-372	Dependent & Independent Variables Writing Formulas P371 Activity: Study the Information & Answer Questions Classwork: Pg372 - 1, 2, 3, 4 Homework: Pg372 - 5, 6, 7, 8
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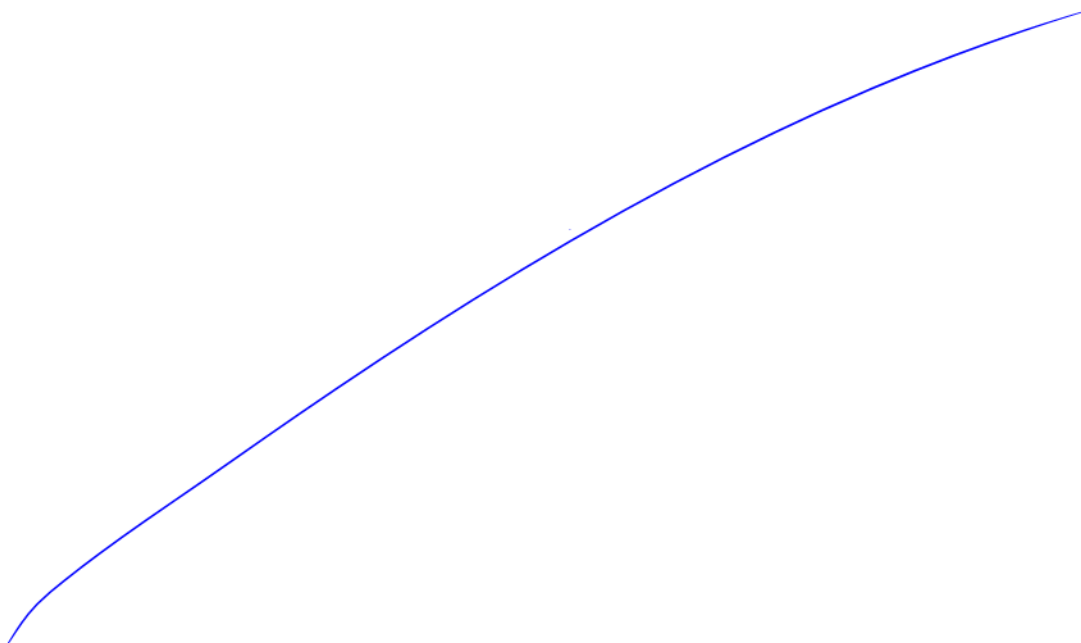
Notes: A formula describes a relationship between two aspects of reality

An Independent Variable is given. "Usually" the "x" variable

A Dependent Variable is the variable we "calculate". Depends upon two things:

- ① The independent variable number
- ② The "functional" rule (or formula)

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formula rule: dependent variable = rule of independent

Classwork: Pg 372

Complete the table and state a rule for each pattern.

1.

a	1	2	3	4	5	6	7
b	3	6	9	12	15	18	21

→ independent

$$b = 3a$$

2.

m	2	4	6	8	10	12	14
n	5	7	9	11	13	15	17

- dependent (being calculated)

→ independent

$$m = n - 3$$

3.

t	25	24	23	22	21	20	19
u	100	96	92	88	84	80	76

dep.

→ indep.

$$t = \frac{1}{4}u \quad \text{or} \quad t = \frac{u}{4}$$

4.

Number of Books (n)	1	2	3	4
Cost (c)	40	80	120	160

- indep.

dependent

$$c = 40n$$

7. Bus rental The cost to rent a bus is \$100, plus a certain amount per kilometre. The table gives the cost of 3 bus trips. Write a formula to calculate the cost of a bus trip in terms of distance.

Trip	Distance, d (km)	Cost, C (\$)
1	50	250
2	100	400
3	150	550

$$250 = 150 + 100$$

$$400 = 300 + 100$$

$$550 = 450 + 100$$

we have to find this

C = some rule

→ C is dependent

$$C = \text{cost for km} + 100$$

$$\Rightarrow C = 3d + 100$$