

Dear Parents / Students

Due to the unprecedented situation, Knowledgeplus Training center is mobilized and will keep accompanying and supporting our students through this difficult time. Our Staff will be continuously, sending notes and exercises on a weekly basis through what's app and email. Students are requested to copy the notes and do the exercises on their copybooks. The answers to the questions below will be made available on our website on knowledgeplus.mu/support.php. Please note that these are extra work and notes that we are providing our students and all classes will be replaced during the winter vacation. We thank you for your trust and are convinced that, together, we will overcome these troubled times.

Knowledgeplus Training Center

Mathematics

Grade 9

Week 7

Notes and Exercise

Note:(All the Notes, Examples and Exercise are on the photos and Note:(Please copy all the Notes, Examples and Exercises on your copy book).

Mathematics Grade 9 week 7
Subject of Formula

Working with a given formula

Example

It is given that $S = 180n - 360$. Find

- (i) Value of S when $n = 5$,
(ii) the value of n when $S = 1440$

Solution

$$S = 180n - 360$$

Always write the formula up first.

(i) $n = 5$ (n is given)

(ii) $S = 1440$

$$\therefore S = 180(5) - 360$$

$$1440 = 180n - 360$$

$$= 900 - 360$$

replace $n=5$ in the formula. $180n - 360 = 1440$

$$= 540$$

then find the value of S .

$$180n = 1440 + 360$$

$$\therefore S = 540$$

Same as for part d.

$$180n = 1800$$

$$n = \frac{1800}{180}$$

$$= 10$$

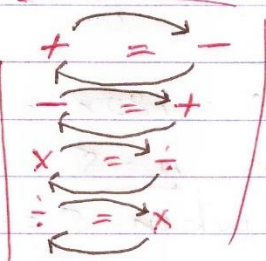
example. $\therefore n = 10$

Examine the formula then work out the exercise.

Changing the subject of formula.

~~Remember~~

Remember:



You must know this well to do any question in mathematics.

Example

It is given that $v = u + at$. Change the subject to:

(i) u (ii) t

(i) $v = u + at$

$$u + at = v$$

$$u = v - at$$

So $\therefore u = v - at$

(ii) $v = u + at$

$$u + at = v$$

$$at = v - u$$

$$t = \frac{v - u}{a}$$

a

Example 3

It is given that $y = \frac{x-5}{a}$. Make x the subject of formula.

Solution

$$y = \frac{x-5}{a}$$

← a

Send a to y . As a is going to y and as a is a division it will go up as multiplication.

$$ay = x-5$$

$$x-5 = ay$$

$$x = ay + 5$$

Change of subject - Harder problems involving grouping

You must know equation, Quadratic equation and cross-multiply well. So do yourself a favor to revise the previous of quadratic ~~any~~ equation before doing these ~~ex~~ question

Example 4

Given that $y = \frac{2x+5}{3x-4}$, make x the new subject-

$$y = \frac{2x+5}{3x-4}$$

← $3x-4$

$$y(3x-4) = 2x+5$$

$$3xy - 4y = 2x + 5$$

$$3xy - 2x = 5 + 4y$$

$$x(3y - 2) = 5 + 4y$$

$$x = \frac{5+4y}{3y-2}$$

$$3y-2$$

Attempt All Question.

- Given that $t = a + 5d$, find the value of
 - t when $a = 4$ and $d = 3$,
 - a when $t = 5$ and $d = 2$,
 - d when $a = 3$ and $t = -12$.
 - Given that $a = 2b - c$, find the value of
 - a when $b = 4$ and $c = 5$,
 - b when $a = 7$ and $c = 8$,
 - c when $a = 2$ and $b = 10$.
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- Given that $v = u + at$, find the value of
 - v when $u = 10$, $a = 2$ and $t = 8$,
 - u when $v = 30$, $a = 3$ and $t = 5$,
 - t when $v = 30$, $u = 18$ and $a = 4$.
-

- In each of the following, make x the subject of formula.
 - $x + 2 = b$
 - $x - a = 2b$
 - $2x - y = k$
 - $a + 2x = 5$
 - $3(x - y) = a$
 - Make x the subject of formula.
 - $ax = b$
 - $ax = b + 2$
 - $xy = 2 - a$
 - $xy - b = a$
 - $a(x - b) = c$
 - Make x the subject of formula.
 - $a - x = b$
 - $2b - x = c$
 - $y - 2x = a$
 - $3(a - x) = b$
 - $a(b - 2x) = c$
 - Make x the subject of formula.
 - $\frac{x}{a} = b$
 - $\frac{k}{x} = y$
 - $\frac{x - a}{2} = b$
 - $\frac{4x + b}{2} = c$
 - $\frac{ax - b}{c} = 2$
 - Make x the subject of formula.
 - $\frac{x}{2} = b + c$
 - $\frac{x}{a} - b = 2c$
 - $\frac{a}{x} - y = 2$
 - $\frac{1}{x} - 7 = a$
 - $3 + \frac{2}{x} = y$
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1. Make x the subject of formula.

(a) $y = x(a + 2)$ (b) $y = 2x(a - 5)$ (c) $y = 2x + ax$ (d) $y = 2ax - 4x$ (e) $y + ax = bx$

2. Change the subject of formula to x .

(a) $y = \frac{2x + 3}{x - 1}$ (b) $y = \frac{3x - 2}{x + 5}$ (c) $y = \frac{3x - 1}{2x + 3}$ (d) $y = \frac{3x + a}{2x + b}$ (e) $y = \frac{3x + a}{2x}$
