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

Garde 9

Week 8

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).

Example 1.

3. It is given that $S = \frac{PRT}{100}$.

(a) Find the value of S when $P = 4$, $R = 5$ and $T = 4$.

(b) (i) Change the subject of the formula to T.

(ii) Hence find the value of T when $S = 300$, $P = 5000$ and $R = 2$.

Example 1 : Solution

$P=4$, $R=5$, $T=4$

(a) $S = \frac{PRT}{100}$

$S = \frac{4 \times 5 \times 4}{100}$

$= \frac{80}{100}$

$= 0.8$ or $\frac{4}{5}$

(b.i) $S = \frac{PRT}{100}$

$100S = PRT$

$PRT = 100S$

$T = \frac{100S}{PR}$

(ii) $T = \frac{100S}{PR}$

$S = 300$, $P = 5000$, $R = 2$

$T = \frac{100 \times 300}{5000 \times 2}$

$T = \frac{30000}{10\,000}$

$= 3$

$\therefore T = 3$

Example 2.

4. It is given that $v = \sqrt{u^2 + 2as}$.
   (a) Find the value of v when $u = 3$, $a = 5$ and $s = 4$.
   (b) (i) Change the subject of the formula to s.
   (ii) Hence, or otherwise, find the value of s when $v = 10$, $u = 6$ and $a = 4$.

Example 2 : Solution.

(a)

$v = \sqrt{u^2 + 2as}$

$u = 3$, $a = 5$, $s = 4$

$v = \sqrt{3^2 + 2(5)(4)}$

$v = \sqrt{49}$

$v = 7$

(b i) $v = \sqrt{u^2 - 2as}$

$\sqrt{u^2 - 2as} = v$

$u^2 - 2as = v^2$

$-2as = v^2 - u^2$

$s = \dfrac{v^2 - u^2}{-2a}$

Note : $\sqrt{a} = a^2$

$\sqrt[3]{a} = a^3$

$a^2 = \sqrt{a}$

$a^3 = \sqrt[3]{a}$

(ii) $\therefore \quad s = \dfrac{v^2 - u^2}{-2a}$

$v = 10$, $u = 6$, $a = 4$

$s = \dfrac{10^2 - 6^2}{-2(4)}$

$s = \dfrac{100 - 36}{-8}$

$s = \dfrac{64}{-8}$

$s = -8$

Example 3.

Given that $C = \frac{5}{9}(F - 32)$,

(a) find the value of C when $F = 230$,
(b) make F the new subject,
(c) find the value of F when $C = 30$.

Example 3 : Solution.

(a) $C = \frac{5}{9}(F - 32)$

$F = 230$

$C = \frac{5}{9}(230 - 32)$

$C = \frac{5}{9}(198)$

$C = \frac{5}{9} \times 198$

$C = 110$

(bi) $C = \frac{5}{9}(F - 32)$

$\frac{5}{9}(F - 32) = C$

$5(F - 32) = 9C$

$F - 32 = \frac{9C}{5}$

$F = \frac{9C + 32}{5}$

(c) $F = \frac{9C + 32}{5}$

$C = 30$

$f = \frac{9(30) + 32}{5}$

$f = \frac{270 + 32}{5}$

$f = \frac{302}{5}$

$f = 60.4$

Attempt:Ex1, Ex2, Ex3, Ex4 and Ex 5.

1. The volume V of a cylinder of radius r and height h is given by $V = \pi r^2 h$.

   Taking $\pi = \frac{22}{7}$, find

   (i) the volume of a cylinder of radius 7 cm and height 10 cm,
   (ii) the radius of a cylinder of volume 12320 cm^3 and height 20 cm.

2. It is given that $P = 2r + r\theta$.
   (a) Find the value of P when $r = 10$ and $\theta = 0.8$.
   (b) Change the subject of formula to (i) θ, (ii) r.
   (c) Use your answer to part (b)(ii) to find the value of r when $P = 64$ and $\theta = 1.2$

3. Given that $E = \frac{1}{2}mv^2$, where v is positive, find the value of

   (i) E when $m = 24$ and $v = 5$, (ii) v when $E = 625$ and $m = 50$.

4. It is given that $T = \frac{1}{2}n(n + 1)$, where n is a positive integer.

   (a) Find the value of T when $n = 8$.
   (b) Find the value of n when $T = 45$.

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5. It is given that $T = 2\pi\sqrt{\frac{l}{g}}$.

   (a) Find the value of T when $l = 490$ and $g = 10$.
   (b) Make l the new subject. Hence find the value of l when $T = 4.4$ and $g = 10$.
