

SUBJECT OF THE FORMULA

Summary:

1. Subject of the formula is the formula for the required subject.
2. Making the subject of the formula means finding the formula for the required subject (term).

EXAMPLES:

1. Make **m** the subject in this formula $y = mx + c$.
2. Make **s** the subject in this formula $v^2 = u^2 + 2as$.
3. If $s = ut + \frac{1}{2}at^2$, express **a** in terms of **s**, **u** and **t**. Hence find **a** when **s** = 19, **u** = 8 and **t** = 2.
4. Make **c** the subject in this formula $\frac{1}{c} = \frac{1}{a} + \frac{1}{b}$, hence find **c** when **a** = 10 and **b** = 15.
5. If $T - mg = ma$, express **m** in terms of **T**, **g** and **a**. Hence find **m** when **T** = 52, **a** = 3.2 and **g** = 9.8.
6. If $k(n + 3) = 5n + 2$, express **n** in terms of **k**. Hence find **n** when **k** = 1.
7. Make **v** the subject in this formula $\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$, hence find **v** when **f** = 6 and **u** = 10.
8. If $\frac{1}{a} = \frac{bc}{b+c}$, make **c** the subject of the formula
9. Make **n** the subject in this formula $I = \frac{nE}{nR + r}$
10. Make **V** the subject in this formula $R = \frac{Vr}{V - 2}$. Hence find **V** when **R** = 5r

11. If $s = \frac{rk - a}{r - 1}$, make c the subject of the formula. Hence find r when $s = 93$, $a = 3$ and $k = 48$.

12. If $v = \frac{1}{3}\pi r^2 h$, make r the subject of the formula.

13. If $a^2 + b^2 = c^2$, make b the subject of the formula. Hence find the values of b when $c = 10$ and $a = 6$.

14. If $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$, make y the subject of the formula. Hence find the values of y when $a = 4$, $b = 8$ and $x = 5$.

15. If $b^2 = 4ac + (2ax + b)^2$, make x the subject of the formula. Hence find the values of x when $a = 2$, $b = -4$ and $c = -6$.

16. Make r the subject in this formula $v = \frac{4}{3}\pi r^3$. Hence find r when $v = 38.808$ and $\pi = \frac{22}{7}$.

17. Make b the subject in this formula $a = \frac{b^3}{b^3 + c}$. Hence find b when $c = 864$ and $a = 0.2$.

18. Make r the subject in this formula $v = \frac{\pi pr^4}{8kl}$.

19. Make r the subject in this formula $A = P\left(1 + \frac{r}{100}\right)^n$, hence find r when

$$A = 8,820, p = 8,000 \text{ and } n = 2.$$

20. If $k = \sqrt{\frac{w}{w + a}}$, make w the subject of the formula

21. Make **d** the subject in this formula $p = 2\pi\sqrt{\frac{d}{d-k}}$.

22. Make **k** the subject in this formula $p = \left(\frac{k-1}{k+1}\right)^{\frac{1}{2}}$.

23. Make **k** the subject in this formula $p = \sqrt[3]{\frac{b(x-k)}{k}}$.

23. Make **x** the subject in this formula $k = \sqrt[4]{px^2 - d}$.

24. If $y = \frac{1}{2}mv^2$ and $k = \frac{x}{v}$, express **y** in terms of **m**, **x** and **k**.

25. If $V = \frac{1}{3}\pi r^2 h$ and $A = 4\pi r^2$, express **V** in terms of **A** and **h**.

EER:

1. Make **a** the subject in this formula $v = u + at$. Hence find **a** when $v = 12t$ and $u = 5t$.

2. If $c = \frac{5(f-32)}{9}$, express **f** in terms of **c**

3. Make **P** the subject in this formula $I = \frac{PRT}{100}$. Hence find **P** when $I = 740$, $T = 2$ and $R = 5$.

4. Make **s** the subject in this formula $v = \sqrt{u^2 + 2as}$. Hence find **s** when $v = 9$, $u = 5$ and $a = 3.5$.

5. Make **d** the subject in this formula $T = 2\pi\sqrt{\frac{d}{g}}$.

6. If $\frac{p}{q} = \frac{x}{x+c}$, make **x** the subject of the formula

7. If $p = \frac{k(x - a)}{a}$, make **a** the subject of the formula

8. Make **V** the subject in this formula $R = \frac{Vr}{V - 2}$. Hence find **V** when **R = 5r**

9. If $p = \frac{4q + r}{r}$,

(i) find the value of **p** when **q = r**.

(ii) make **r** the subject

10. If $p = \sqrt{\frac{k(x - a)}{a}}$, make **a** the subject of the formula

11. Make **k** the subject in this formula $p = \sqrt[3]{\frac{k - 1}{k + 1}}$.

12. Make **y** the subject in this formula $a = \frac{x}{y^2} - m$. Hence find the values of **y** when **x = 80**, **a = 2** and **m = 3**.

13. If $m = (Ax - B)^2$, make **x** the subject of the formula. Hence find the values of **x** when **m = 16**, **A = 2** and **B = 6**.

14. Make **r** the subject in this formula $A = P\left(1 + \frac{r}{100}\right)^4$, hence find **r** when

A = 20,736 and **P = 10,000**.

15. Make **b** the subject in this formula $h = \sqrt{\frac{ab^3}{a + b^3}}$. Hence find **b** when **h = 6** and **a = -108**.

16. If $k = \sqrt{\frac{x + 1}{x}}$, make **x** the subject of the formula

17. If $y = \frac{4x + 3}{x + 1}$, express x in terms of y

18. If $p = (1 + x)^n$, express x in terms of p and n