

Outcome 2 - 2/3 step questions/Solving for the denominator

Bronze examples

Examples...

Change the subject of the formula to d.

$$c = d^2 - 8$$

$$d^2 - 8 = c$$

$$d^2 = c + 8$$

$$d = \sqrt{c + 8}$$

$$e = c\sqrt{d}$$

$$c\sqrt{d} = e$$

Common sense line!
Do the opposite!
Add 8
Square root

$$\sqrt{d} = \frac{e}{c}$$

$$d = \left(\frac{e}{c}\right)^2$$

Silver examples

Examples...

Change the subject of the formula to b.

$$a = cb^2 - 5$$

$$cb^2 - 5 = a$$

$$cb^2 = a + 5$$

$$b^2 = \frac{a + 5}{c}$$

$$b = \sqrt{\frac{a + 5}{c}}$$

Common sense line!
Add 5
Divide by c
Square root

$$c = a + 3\sqrt{b}$$

$$a + 3\sqrt{b} = c$$

$$3\sqrt{b} = c - a$$

$$\sqrt{b} = \frac{c - a}{3}$$

$$b = \left(\frac{c - a}{3}\right)^2$$

Gold examples

Examples...

Change the subject of the formula to v.

$$p = \frac{r}{v}$$

$$pv = r$$

$$D = \frac{m}{v^2}$$

$$v^2 D = m$$

$$v = \sqrt{\frac{m}{D}}$$

NO common sense line!
Multiply by v
Divide by p
Multiply by v^2
Divide by D
Square root

$$v = \frac{r}{p}$$

$$v^2 = \frac{m}{D}$$

Bronze Questions

Change the subject of the formula to the letter in the bracket...

1 $b = c^2 + d$ (c) 2 $p = q + r^2$ (r)

3 $r = t^2 - 5$ (t) 4 $d = 4f^2$ (f)

5 $A = 4\pi r^2$ (r) 6 $W = \frac{e^2}{r}$ (e)

7 $k = \frac{p^2}{l}$ (p) 8 $v = \sqrt{\frac{w}{2}}$ (w)

9 $c = \sqrt{d} + f$ (d) 10 $r = \frac{\sqrt{s}}{8}$ (s)

Silver Questions

Change the subject of the formula to the letter in the bracket...

1 $r = bx^2 - n$ (x) 2 $e = 9r^2 + 1$ (r)

3 $h = 4 + aT^2$ (T) 4 $y = \frac{v^2}{z} + 3$ (v)

5 $A = \frac{w^2 r}{p}$ (w) 6 $h = \frac{e^2}{c} + g$ (e)

7 $l = \left(\frac{m}{n}\right)^2 + k$ (m) 8 $a = b\left(\frac{c}{d}\right)^2$ (c)

9 $v = c + 2\sqrt{a}$ (a) 10 $e = a\sqrt{s} - v$ (s)

Gold Questions

Change the subject of the formula to the letter in the bracket...

1 $d = \frac{a}{c}$ (c) 2 $g = \frac{8}{l}$ (l)

3 $b = \frac{w - 5}{m}$ (m) 4 $y = \frac{z + 4}{x}$ (x)

5 $C = \frac{a^2}{p}$ (p) 6 $w = \frac{r}{h^2}$ (h)

7 $r = \frac{s^2}{5t}$ (t) 8 $u = \sqrt{\frac{3}{v}}$ (v)

Bronze Answers

- | | |
|--------------------------------|-----------------------------|
| 1. $c = \sqrt{b-d}$ | 2. $r = \sqrt{p-q}$ |
| 3. $t = \sqrt{r+5}$ | 4. $f = \sqrt{\frac{d}{4}}$ |
| 5. $r = \sqrt{\frac{A}{4\pi}}$ | 6. $e = \sqrt{Wr}$ |
| 7. $p = \sqrt{kl}$ | 8. $w = 2v^2$ |
| 9. $d = (c-f)^2$ | 10. $s = (8r)^2$ |

Silver Answers

- | | |
|---------------------------------------|----------------------------------------|
| 1. $x = \sqrt{\frac{r+n}{b}}$ | 2. $r = \sqrt{\frac{e-1}{9}}$ |
| 3. $T = \sqrt{\frac{h-4}{a}}$ | 4. $v = \sqrt{z(y-3)}$ |
| 5. $w = \sqrt{\frac{Ap}{r}}$ | 6. $e = \sqrt{c(h-g)}$ |
| 7. $m = n\sqrt{l-k}$ | 8. $c = d\sqrt{\frac{a}{b}}$ |
| 9. $a = \left(\frac{v-c}{2}\right)^2$ | 10. $s = \left(\frac{e+v}{a}\right)^2$ |

Gold Answers

- | | |
|-------------------------|-----------------------------|
| 1. $c = \frac{a}{d}$ | 2. $l = \frac{8}{g}$ |
| 3. $m = \frac{w-5}{b}$ | 4. $x = \frac{z+4}{y}$ |
| 5. $p = \frac{a^2}{c}$ | 6. $h = \sqrt{\frac{r}{w}}$ |
| 7. $t = \frac{s^2}{5r}$ | 8. $v = \frac{3}{u^2}$ |