

Rearranging Formulae

Make a the subject of the following formulae:

1) $2a = b$

2) $\frac{a}{2} = b$

3) $a + 2 = b$

4) $a - 2 = b$

5) $\frac{a}{c} = b$

6) $\frac{a}{c} + 2 = b$

7) $ac = b$

8) $ac - 2 = b$

9) $ac - d = b$

10) $\frac{a+2}{c} = b$

11) $\frac{2a}{c} = b$

12) $\frac{d(a+2)}{c} = b$

13) $2a = b + a$

14) $2a + c = b + a$

15) $2a + c = b - a$

16) $ae + c = b + a$

17) $ae + c = b + af$

18) $ae + c = b - af$

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Answers/Worked Solutions

$$\begin{aligned} \textcircled{1} \quad \frac{2a}{2} &= \frac{b}{2} \\ a &= \frac{b}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{4} \quad a-2 &= b \\ +2 \quad +2 & \\ a &= b+2 \end{aligned}$$

$$\begin{aligned} \textcircled{7} \quad \frac{ac}{c} &= \frac{b}{c} \\ a &= \frac{b}{c} \end{aligned}$$

$$\begin{aligned} \textcircled{10} \quad \frac{a+2}{c} &= \frac{b}{c} \\ \times c \quad \times c & \\ a+2 &= bc \\ -2 \quad -2 & \\ a &= bc-2 \end{aligned}$$

$$\begin{aligned} \textcircled{13} \quad \frac{2a}{-a} &= \frac{b+a}{-a} \\ a &= b \end{aligned}$$

$$\begin{aligned} \textcircled{16} \quad \frac{ae}{-a} + c &= \frac{b+af}{-a} \\ ae - a + c &= b - c \\ -c \quad -c & \\ ae - a &= b - c \\ \text{FACTORISE!} & \\ \frac{a(e-1)}{e-1} &= \frac{b-c}{e-1} \\ a &= \frac{b-c}{e-1} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \frac{a}{2} &= b \\ \times 2 \quad \times 2 & \\ a &= 2b \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \frac{a}{c} &= b \\ \times c \quad \times c & \\ a &= bc \end{aligned}$$

$$\begin{aligned} \textcircled{8} \quad ac-2 &= b \\ +2 \quad +2 & \\ \frac{ac}{c} &= \frac{b+2}{c} \\ a &= \frac{b+2}{c} \end{aligned}$$

$$\begin{aligned} \textcircled{11} \quad \frac{2a}{c} &= \frac{b}{c} \\ \times c \quad \times c & \\ 2a &= bc \\ \frac{2a}{2} &= \frac{bc}{2} \\ a &= \frac{bc}{2} \end{aligned}$$

$$\begin{aligned} \textcircled{14} \quad \frac{2a}{-a} + c &= \frac{b+a}{-a} \\ -a \quad -a & \\ a+c &= b-a \\ -c \quad -c & \\ a &= b-c \end{aligned}$$

$$\begin{aligned} \textcircled{17} \quad \frac{ae}{-af} + c &= \frac{b+af}{-af} \\ -af \quad -c \quad -c \quad -af & \\ ae - af &= b - c \\ \text{FACTORISE!} & \\ \frac{a(e-f)}{e-f} &= \frac{b-c}{e-f} \\ a &= \frac{b-c}{e-f} \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad a+2 &= b \\ -2 \quad -2 & \\ a &= b-2 \end{aligned}$$

$$\begin{aligned} \textcircled{6} \quad \frac{a}{c} + 2 &= b \\ -2 \quad -2 & \\ \frac{a}{c} &= b-2 \\ \times c \quad \times c & \\ a &= c(b-2) \end{aligned}$$

$$\begin{aligned} \textcircled{9} \quad ac-d &= b \\ +d \quad +d & \\ \frac{ac}{c} &= \frac{b+d}{c} \\ a &= \frac{b+d}{c} \end{aligned}$$

$$\begin{aligned} \textcircled{12} \quad \frac{d(a+2)}{c} &= \frac{b}{c} \\ \times c \quad \times c & \\ \frac{d(a+2)}{d} &= \frac{bc}{d} \\ a+2 &= \frac{bc}{d} \\ -2 \quad -2 & \\ a &= \frac{bc}{d} - 2 \end{aligned}$$

$$\begin{aligned} \textcircled{15} \quad \frac{2a}{+a} + c &= \frac{b-a}{+a} \\ +a \quad +a & \\ 3a+c &= b-a \\ -c \quad -c & \\ \frac{3a}{3} &= \frac{b-c}{3} \\ a &= \frac{b-c}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{18} \quad \frac{ae}{+af} + c &= \frac{b+af}{+af} \\ +af \quad -c \quad -c \quad +af & \\ ae + af &= b - c \\ \text{FACTORISE!} & \\ \frac{a(e+f)}{e+f} &= \frac{b-c}{e+f} \\ a &= \frac{b-c}{e+f} \end{aligned}$$