

Rearranging Equations and Isolating Variables

Solve each equation or formula for the variable indicated.

1. $d = rt$, for r

$$t \quad t$$
$$\boxed{\frac{d}{t} = r}$$

3. $mx + 4 = 3t$, for x

$$-4y - 4y$$
$$mx = 3t - 4y$$
$$\frac{mx}{m} = \frac{3t - 4y}{m}$$
$$\boxed{x = \frac{3t - 4y}{m}}$$

5. $ab + 3c = 2x$, for b

$$-3c - 3c$$
$$\frac{ab}{a} = \frac{2x - 3c}{a}$$
$$\boxed{b = \frac{2x - 3c}{a}}$$

7. $\frac{2}{3}m + a = r$, for m

$$\frac{2}{3}m = r - a$$
$$m = \frac{r}{2/3} = \frac{3}{2}r - a$$
$$\boxed{m = \frac{3}{2}r - a}$$

9. $\frac{2}{3}y + v = x$, for y

$$\frac{2}{3}y = x - v$$
$$\frac{2y}{3} = \frac{3(x - v)}{2/3}$$
$$\boxed{y = \frac{3}{2}(x - v)}$$

11. $\frac{rx}{5} + 9 = h$, for x

$$\frac{rx}{5} = h - 9$$
$$rx + 9 = 5h$$
$$-9 -9$$
$$rx = 5h - 9$$
$$\frac{rx}{r} = \frac{5h - 9}{r}$$
$$\boxed{x = \frac{5h - 9}{r}}$$

13. $2w - y = 7w - 2$, for w

$$-y + y$$
$$2w = 7w - 2$$
$$-7w -7w$$
$$-5w = y - 2$$
$$\frac{-5w}{-5} = \frac{y - 2}{-5}$$
$$\boxed{w = \frac{y - 2}{-5}}$$

2. $6w - y = 2z$, for w

$$+y + y$$
$$6w = 2z + y$$
$$\frac{6w}{6} = \frac{2z + y}{6}$$
$$\boxed{w = \frac{2z + y}{6}}$$

4. $9s - 5g = -4u$, for s

$$+5g + 5g$$
$$9s = -4u + 5g$$
$$\frac{9s}{9} = \frac{-4u + 5g}{9}$$
$$\boxed{s = \frac{-4u + 5g}{9}}$$

6. $2p = kx - t$, for x

$$+t +t$$
$$2p + t = kx$$
$$\frac{2p + t}{k} = \frac{kx}{k}$$
$$\boxed{\frac{2p + t}{k} = x}$$

8. $\frac{2}{5}h + g = d$, for h

$$-g -g$$
$$\frac{2}{5}h = d - g$$
$$h = \frac{5}{2}(d - g)$$
$$\boxed{h = \frac{5}{2}(d - g)}$$

10. $\frac{3}{4}a + g = k$, for a

$$-g -g$$
$$\frac{3}{4}a = k - g$$
$$\frac{3a}{4} = \frac{4(k - g)}{4}$$
$$\boxed{a = \frac{4}{3}(k - g)}$$

12. $\frac{3b}{2} - 4 = c$, for b

$$+4 +4$$
$$3b - 4 = 2c$$
$$+4 +4$$
$$3b = 2c + 4$$
$$\frac{3b}{3} = \frac{2c + 4}{3}$$
$$\boxed{b = \frac{2c + 4}{3}}$$

14. $3\ell + y = 5 + 5\ell$, for ℓ

$$-5\ell -5\ell$$
$$-2\ell + y = 5$$
$$+y -y$$
$$-2\ell = 5 - y$$
$$\frac{-2\ell}{-2} = \frac{5 - y}{-2}$$
$$\boxed{\ell = \frac{5 - y}{-2}}$$

...over for word problems!