Transposition

Transpose the following equations to make the letter in brackets the subject:

1. $v = u + at$ (u)

2. $v^2 = u^2 + 2as$ (s)

3. $s = vt - \frac{1}{2}at^2$ (a)

4. $p = 2(w + h)$ (h)

5. $A = 2\pi r^2 + 2\pi rh$ (h)

6. $E = \frac{1}{2}mv^2 + mgh$ (v)

7. $E = \frac{1}{2}mv^2 + mgh$ (m)

8. $a(3b - 1) = 2b + 2$ (b)

9. $\dfrac{t}{2t - s} = 3s$ (t)

10. $\dfrac{s}{2t - s} + 5 = 3t$ (s)

11. $y = a + \dfrac{1}{x}$ (x)

12. $y = a + \dfrac{1}{1 - x}$ (x)

13. $P = \dfrac{P_0}{1 - r^2}$ (r)

14. $m = k\sqrt{a(1 - x)}$ (x)

15. $V = \dfrac{V_0}{\sqrt{r^2 - 1}}$ (r)

Solution: 1) $u = v - at$,   2) $s = \dfrac{v^2 - u^2}{2a}$,   3) $a = \dfrac{2(vt - s)}{t^2}$,   4) $h = \dfrac{p}{2} - w$,   5) $h = \dfrac{A - 2\pi r^2}{2\pi r}$,   6) $v = \sqrt{\dfrac{2(E - mgh)}{m}}$,   7) $m = \dfrac{E}{\frac{1}{2}v^2 + gh}$,   8) $b = \dfrac{2 + a}{3a - 2}$,   9) $t = \dfrac{3s^2}{6s - 1}$,   10) $s = \dfrac{2t(3t - 5)}{3t - 4}$,   11) $x = \dfrac{1}{y - a}$,   12) $x = 1 - \dfrac{1}{y - a}$,   13) $r = \sqrt{1 - \dfrac{P_0}{P}}$,   14) $x = 1 - \dfrac{\left(\frac{m}{k}\right)^2}{a}$,   15) $r = \sqrt{\left(\dfrac{V_0}{V}\right)^2 + 1}$,