CHANGE OF SUBJECT WORKSHEET

1. Make p the subject of the formula $r = \sqrt{\dfrac{4 + 3p^2}{s}}$

2. Make R the subject of the formula $A = \pi \left(\dfrac{R - r}{2}\right)^2$

3. Given that $m = \dfrac{\sqrt{1 - n^2}}{n}$, express n in terms of m.

4. If $\dfrac{1}{R} = \dfrac{1}{v} + \dfrac{2}{t}$, express t in terms of R and v.

5. Given that $\dfrac{4}{x} + \dfrac{3}{y} = \dfrac{7}{t}$, express t in terms of x and y.

6. Given that $x = \dfrac{y - 2}{y - 3}$, express y in terms of x.

7. Given that $\dfrac{2x}{3} + \dfrac{4}{y} = 1$, express y in terms of x.

8. (a) Make a the subject of the formula $b = \dfrac{3a + 2}{a + 3}$.

   (b) Calculate the value of a when $b = 2$.

9. Make y the subject of the formula $\sqrt{\dfrac{ym}{t}} = 3b$.

10. If $\dfrac{p}{s} = \dfrac{q}{s} + r$, express s in terms of p, q and r.

11. Given that $l = \sqrt{\dfrac{3m}{5}}$, express m in terms of t.

12. Given that $s - 3t = rt$
    (a) Express t in terms of r and s
    (b) Calculate the value of t when $r = 2$ and $s = 15$.

13. Express m as the subject of the formula $t = \sqrt{\dfrac{5m}{12n}}$

14. Given that $r = \dfrac{2p^2}{q - 3}$, rearrange the formula to make q the subject.

15. The temperature in degrees Celsius is calculated using the formula $C = \dfrac{5}{9}(F - 32)$ where F is the temperature in degrees Fahrenheit,
    (a) Make F the subject of the formula.
    (b) The temperature in London is $15°C$. Use the formula derived in (a) above to convert this temperature to degrees Fahrenheit.

ANSWERS

1. $p = \sqrt{\dfrac{r^2 s - 4}{3}}$

2. $r + 2\sqrt{\dfrac{A}{\pi}} = R$

3. $n = \sqrt{\dfrac{1}{m^2 + 1}}$

4. $t = \dfrac{2Rv}{V - R}$

5. $t = \dfrac{7xy}{4y + 3x}$

6. $y = \dfrac{3x - 2}{x - 1}$

7. $y = \dfrac{12}{3 - 2x}$

8. (a) $a = \dfrac{2 - 3b}{b - 3}$ (b) 4

9. $y = \dfrac{9b^2 t^2}{m}$

10. $s = \dfrac{p - q}{r}$

11. $m = \dfrac{5l^2}{3}$

12. (a) $t = \dfrac{s}{3 + r}$ (b) 3

13. $m = \dfrac{12n t^2}{5}$

14. $q = \dfrac{2p^2 + 3r}{r}$

15. (a) $\dfrac{9C}{5} + 32 = F$ (b) 59°