

Rearranging Square Root Equations

Worked Example

Given: $y = \sqrt{3x + 5}$

To make x the subject:

1. Square both sides: $y^2 = 3x + 5$
2. Subtract 5 from both sides: $y^2 - 5 = 3x$
3. Divide both sides by 3: $x = \frac{y^2 - 5}{3}$

Rearranging Square Root Equations Questions

1. Make x the subject of $y = \sqrt{2x - 1}$
2. Make p the subject of $q = 4 + \sqrt{5p}$
3. Make t the subject of $s = 2\sqrt{t - 3}$
4. Make m the subject of $n = \sqrt{7 - 2m}$
5. Make b the subject of $a = 3\sqrt{2b + 4}$
6. Make k the subject of $h = \sqrt{4k} + 2$
7. Make x the subject of $y = 5 - \sqrt{x + 6}$
8. Make p the subject of $r = 2\sqrt{3p - 1} - 1$

Answer Key

1. $x = \frac{y^2+1}{2}$

2. $p = \frac{(q-4)^2}{5}$

3. $t = \frac{s^2}{4} + 3$

4. $m = \frac{7-n^2}{2}$

5. $b = \frac{1}{2} \left(\frac{a}{3} \right)^2 - 2$

6. $k = \frac{(h-2)^2}{4}$

7. $x = (5-y)^2 - 6$

8. $p = \frac{1}{3} \left(\frac{r+1}{2} \right)^2 + \frac{1}{3}$

9. $y = \frac{(x+3)^2-5}{2}$

10. $t = (2-s)^2 - 1$