

Worksheet - Extra Practice

Solving Equations

1. Solve and check each of the following. Use opposite operations to solve. To get full marks on the test you must show all steps. Do NOT guess and check and do NOT use inspection.

a) $15 - z = -9$	b) $4x - 3 = 2$	c) $5 - 3x = 41$	d) $7x - 4 = -2x + 11$
e) $\frac{-4x}{5} = 10$	f) $\frac{5-3t}{8} = -10$	g) $8 = \frac{-1}{7}(5x - 1)$	
h) $-4(6x + 1) + 3 = 11 + 2(x + 2)$	i) $\frac{3x+2}{5} + 1 = \frac{2x}{5} - \frac{7}{10}$	j) $\frac{39}{100} = \frac{351}{x}$	
k) $\frac{m+2}{2} = \frac{m-1}{3}$	l) $\frac{w+1}{2} + \frac{w+1}{3} = 5$	m) $\frac{x}{3} - \frac{1}{2} = \frac{1}{4}$	
n) $7 + \frac{3x}{2} = \frac{2x-7}{3} + 1$	o) $\frac{2x}{3} - \frac{x+1}{4} = 3 - \frac{x}{3}$		

Rearranging Equations

For each section below, complete the ODD numbered questions. If you are having difficulty, ask for help. Then attempt the EVEN numbered questions.

A/ Rearrange to isolate the variable listed in the brackets.

1. $y = mx + c$, for c	2. $y = mx + c$, for m	3. $v^2 = u^2 + 2as$, for s
4. $2s = 2ut + at^2$, for a	5. $v^2 = u^2 + 2as$, for a	6. $y = a^2x + b^2$, for x

B/ Rearrange each equation below for x.

7. $2(x + a) = y$	8. $\frac{x}{a} = \frac{y+z}{b}$	9. $\frac{a(x+y)}{b} = c$	10. $a(x + y) = y(a + z)$
11. $\frac{x}{a} = \frac{y}{z}$	12. $\frac{1}{3}x + 2y = 3z$	13. $a(x + y) = ay$	14. $\frac{x}{a} = \frac{a}{b}$

C/ Rearrange each equation below in terms of the variable in the bracket. (i.e. For #15, isolate u, etc.)

15. $\frac{v-u}{a} = t$, for u	16. $s = ut + \frac{1}{2}at^2$, for a	17. $s = \frac{u+v}{2}t$, for u
18. $s = ut + \frac{1}{2}at^2$, for u	19. $\frac{(v-u)}{a} = t$, for v	20. $\frac{y-x^2}{x} = 3z$, for y

ANSWERS Solving Equations:

1. a) $z = 24$ b) $x = 5/4$ c) $x = -12$ d) $x = 5/3$ e) $x = -25/2$ f) $t = 85/3$ g) $x = -11$
 h) $x = -8/13$ i) $x = -21/2$ j) $x = 900$ k) $m = -8$ l) $w = 5$ m) $x = 9/4$ n) $x = -10$ o) $x = \frac{13}{3}$

Rearranging Equations

1. $c = y - mx$ 2. $m = \frac{y-c}{x}$ 3. $s = \frac{v^2-u^2}{2a}$ 4. $a = \frac{2s-stu}{t^2}$ 5. $a = \frac{v^2-u^2}{2s}$ 6. $x = \frac{y-b^2}{a^2}$ 7. $x = \frac{y}{2} - a$
 8. $x = \frac{ay+az}{b}$ 9. $x = \frac{bc}{a} - y$ 10. $x = \frac{yz}{a}$ 11. $x = \frac{ay}{z}$ 12. $x = 9z - 6y$ 13. $x = 0$ 14. $x = \frac{a^2}{b}$
 15. $u = v - at$ 16. $a = \frac{2s-2tu}{t^2}$ 17. $a = \frac{2s}{t} - v$ 18. $u = \frac{s}{t} - \frac{1}{2}at$ 19. $av = at + u$ 20. $y = 3xz + x^2$