Solving Equations Worksheet

① Solve the following equations to find the value of x

a) $x + 3 = 9$ b) $x + 7 = 20$ c) $x + 5 = 8$

d) $x + 9 = 9$ e) $x + 2 = 7$ f) $x - 5 = 1$

g) $x - 15 = 0$ h) $x - 50 = 40$ i) $x + 6 = 4$

j) $x - 5 = 0$ k) $x + 11 = 0$ l) $x - 22 = 28$

m) $8 + x = 5$ n) $1 + x = 1$ o) $7 + x = 0$

p) $10 + x = 3$ q) $6 + x = 6$ r) $15 + x = -15$

② Copy and solve each equation to find the value of the letter.

a) $2x = 18$ b) $5t = 30$ c) $3d = 12$

d) $3f = 18$ e) $4n = 32$ f) $8L = 8$

g) $6c = 15$ h) $9d = 0$ i) $2x = 1$

j) $3m = 150$ k) $10w = 180$ l) $6m = 27$

m) $4x = 12$ n) $5u = 25$ o) $7f = 21$

p) $10c = 35$ q) $8t = 6$ r) $4m = 25$

③ Find the value of x in the following equations.

a) $3x + 1 = 13$ b) $4x + 3 = 23$ c) $6x + 2 = 38$

d) $2x + 5 = 9$ e) $7x - 3 = 32$ f) $5x - 2 = 48$

g) $8x - 6 = 50$ h) $4x - 8 = 0$ i) $10x - 7 = 63$

j) $7x - 3 = 46$ k) $3x + 11 = 14$ l) $8x - 1 = 79$

m) $9x - 10 = 17$ n) $5x + 21 = 21$ o) $6x - 4 = 32$

p) $2x - 3 = 55$ q) $11x + 11 = 0$ r) $2x - 7 = 0$

s) $3x + 20 = 8$ t) $6x + 5 = 20$ u) $4x - 9 = 12$

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④ Solve these equations:

a) $4x + 1 = 2x + 7$ b) $3x + 5 = x + 15$ c) $6x + 7 = 5x + 13$

d) $10x - 6 = 7x + 9$ e) $5x - 1 = 2x + 11$ f) $6x - 1 = x + 19$

g) $12x - 4 = 8x + 24$ h) $10x - 1 = 8x + 6$ i) $4x + 4 = 2x + 12$

j) $6x + 3 = 2x + 10$ k) $9x - 2 = 4x + 9$ l) $7x - 7 = -x + 1$

⑤ These equations look a bit different. Solve them in the same way

a) $3x = 2x + 6$ b) $5x = x + 20$ c) $7x = 4x + 30$

d) $9x = 8x + 6$ e) $3x = x + 13$ f) $5x - 12 = 3x$

g) $4x - 15 = x$ h) $3x + 6 = x$ l) $10x - 21 = 7x$

⑥ I bought 3 bags of marbles. My friend bought 1 bag and he also had 24 loose marbles.

We discovered that we had exactly the same number of marbles.

a) Make up an equation to show this information.
   (let x be the number of marbles in 1 bag)

b) Solve the equation to determine how many marbles there are in each bag.

Solving Equations Answers.

1a)	x = 6	2a)	x = 9	3a)	x = 4	4a)	x = 3
b)	x = 13	b)	t = 6	b)	x = 5	b)	x = 5
c)	x = 3	c)	d = 4	c)	x = 6	c)	x = 6
d)	x = 0	d)	f = 6	d)	x = 2	d)	x = 5
e)	x = 5	e)	n = 8	e)	x = 5	e)	x = 4
f)	x = 6	f)	L = 1	f)	x = 10	f)	x = 4
g)	x = 15	g)	c = 2.5	g)	x = 7	g)	x = 7
h)	x = 90	h)	d = 0	h)	x = 2	h)	x = 3.5
i)	x = -2	i)	x = 1	i)	x = 7	i)	x = 4
j)	x = 5	j)	m = 50	j)	x = 7	j)	x = 1.75
k)	x = -11	k)	w = 18	k)	x = 1	k)	x = 2.2
l)	x = 50	l)	m = 4.5	l)	x = 10	l)	x = 1
m)	x = -3	m)	x = 3	m)	x = 3		
n)	x = 0	n)	u = 5	n)	x = 0		
o)	x = -7	o)	f = 3	o)	x = 6		
p)	x = -7	p)	c = 3.5	p)	x = 29		
q)	x = 0	q)	t = 0.75	q)	x = -1		
r)	x = -30	r)	m = 6.25	r)	x = 3.5		
				s)	x = -4		
				t)	x = 2.5		
				u)	x = 5.25		

5a)	x = 6	b)	x = 5	c)	x = 10	d)	x = 6
e)	x = 7.5	f)	x = 6	g)	x = 5	h)	x = 3
i)	x = 7						

6a) $3x = x + 24$
b) $x = 12$