Solving Equations

1) $3n + 4 = 19$	2) $4n + 5 = 13$	3) $4n - 3 = 25$
4) $2n + 6 = 18$	5) $3n - 2 = 16$	6) $5n + 4 = 34$
7) $3n + 7 = 19$	8) $5n - 6 = 14$	9) $3n - 3 = 21$
10) $3n + 2 = 17$	11) $4n + 6 = 14$	12) $6n + 5 = 41$
13) $5n - 3 = 7$	14) $3n - 4 = 11$	15) $7n + 3 = 24$
16) $6n + 5 = 35$	17) $9n + 1 = 100$	18) $3n - 5 = 10$

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Solving Multi-Step Equations

Date_____ Period____

Solve each equation.

1) $4n - 2n = 4$

2) $-12 = 2 + 5v + 2v$

3) $3 = x + 3 - 5x$

4) $x + 3 - 3 = -6$

5) $-12 = 3 - 2k - 3k$

6) $-1 = -3r + 2r$

7) $6 = -3(x + 2)$

8) $-3(4r - 8) = -36$

9) $24 = 6(-x - 3)$

10) $75 = 3(-6n - 5)$

11) $-3(1+6r)=14-r$

12) $6(6v+6)-5=1+6v$

13) $-4k+2(5k-6)=-3k-39$

14) $-16+5n=-7(-6+8n)+3$

15) $10p+9-11-p=-2(2p+4)-3(2p-2)$

16) $-10n+3(8+8n)=-6(n-4)$

17) $10(x+3)-(-9x-4)=x-5+3$

18) $12(2k+11)=12(2k+12)$

19) $-12(x-12)=-9(1+7x)$

20) $-11+10(p+10)=4-5(2p+11)$

Critical thinking question:

21) Explain two ways you could solve $20=5(-3+x)$

Algebra Worksheet 1

1. Rewrite these expressions without the multiplication or division signs

a) $5 \times k$

b) $a \div 7$

c) $a \times b \times a$

d) $3 \times x \times y$

e) $(a + 3) \div 2$

f) $5 \times b \div 8$

g) $w \times 15$

h) $2a \div 5$

i) $1 \times p$

j) $9 \div t$

2. Rewrite the following expressions using multiplication and division signs where they belong

a) $7a$

b) $\frac{x}{9}$

c) $7x + 3y$

d) $8xyz$

e) y^2

3. Simplify the following

a) $3 \times 2m$

b) $8a \times 4$

c) $7 \times 3x \times a$

d) $2 \times 12c \times 10$

e) $7 \times d \times e$

f) $4 \times 4a$

g) $6 \times x \times x$

h) $9q \times 8$

i) $7s \times 7s$

j) $6 \times x \times y \times 2$

Sheet 7

When we put expressions into brackets it is called factorising, this is the same as undoing expanding:

Example:

Factorise: 6x-12 <

2(3x-6)
3(2x-4)
6(x-2)

These are all correct answers, but 6(x-2) is the best answer because the number outside the bracket is as big as possible

(2,3 & 6 are all factors of 6 and 12, but 6 is the h.c.f.)

Factorise:

a) 15h+30

b) 12m - 18

c) 21b + 7

d) 6h+6

e) 42k+14

f) 30n - 20

Sheet 8

When we put expressions into brackets it is called factorising, this is the same as undoing expanding:

Example:

Factorise: 6x-12 <

2(3x-6)
3(2x-4)
6(x-2)

These are all correct answers, but 6(x-2) is the best answer because the number outside the bracket is as big as possible

(2,3 & 6 are all factors of 6 and 12, but 6 is the h.c.f.)

Factorise:

a) 30j + 40

b) 12p + 16

c) 20 + 16w

d) 15h - 10

e) 35 + 21g

f) -6m - 3

Sheet 5

Find the question:

a) 5(t + ☐)
= 5t + 10

b) 3(☐ + ☐)
= 9w + 3

c) 2(☐ + ☐)
= 2h + 14

d) ☐(☐ + ☐)
= 4k + 2

e) ☐(☐ + ☐)
= 18p + 3

f) ☐(☐ + ☐)
= 25h + 10

g) ☐(☐ - ☐)
= 4u - 6

h) ☐(☐)
= 10f + 8

i) ☐(☐)
= 6g-3

j) ☐
= 5c+ 5

Sheet 6

Find the question:

a) 7(t + ☐)
= 7t + 14

b) 3(☐ + ☐)
= 12h + 3

c) 2(☐ + ☐)
= 2j + 4

d) ☐(☐ - ☐)
= 18k - 9

e) ☐(☐ + ☐)
= 4m + 6

f) ☐(☐ + ☐)
= 8k + 12

g) ☐(☐ + ☐)
= 21g + 14

h) ☐(☐)
= 14j- 12

i) ☐(☐)
= 9 + 6m

j) ☐
= 8m - 8