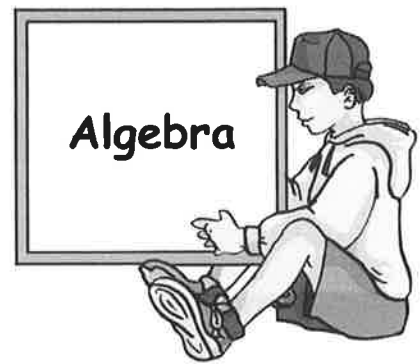


CHAPTER 11



Consolidation



1. What number does $\#$ stand for each time here :-
- a $9 + \# = 17$ b $\# \times 6 = 42$ c $\# - 12 = 9$
 d $\# \div 8 = 7$ e $\# \times 42 = 0$ f $17.2 + \# = 30.$

2. In each of the following, the symbol \diamond stands for $+$, $-$, \times or \div .

Decide which symbol is needed each time here :-

- a $14 \diamond 9 = 5$ b $13 \diamond 2 = 26$ c $2.4 \diamond 3.2 = 5.6$
 d $21 \diamond 21 = 1$ e $25 \diamond 9 = 16$ f $3.6 \diamond 5 = 18.$

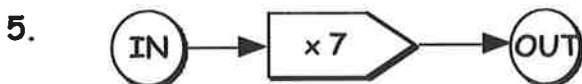
3. Solve the following equations :-

- a $x + 6 = 17$ b $x - 5 = 17$ c $6 \times x = 54$
 d $x \div 7 = 8$ e $x - 19 = 19$ f $88 \div x = 8.$

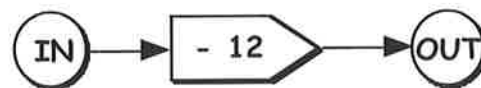
4. Colleen is 23 years old and Donna is aged $*$.

Their combined age is 42 years.

- a Make up an equation using $*$.
 b Solve it to find how old Donna is.



Machine A

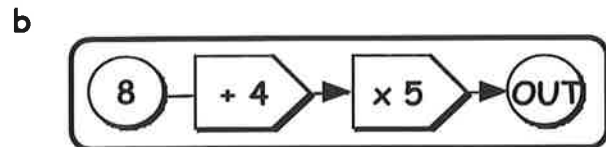
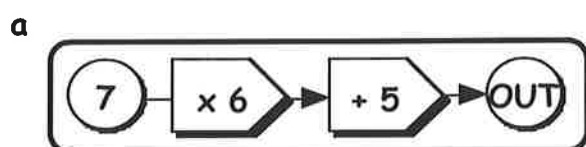


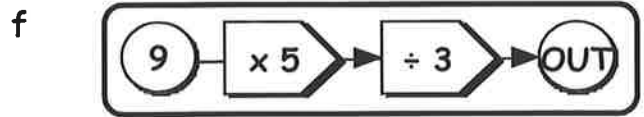
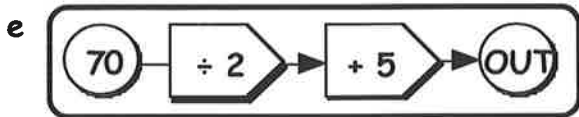
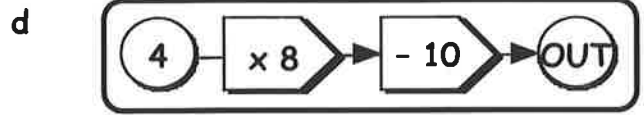
Machine B

- a What number comes out when 9 is put into Machine A ?
 b What number went into Machine B if the number 78 came out ?

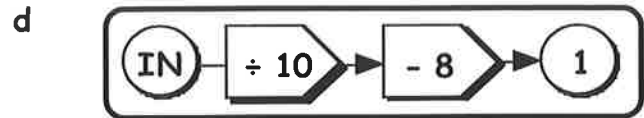
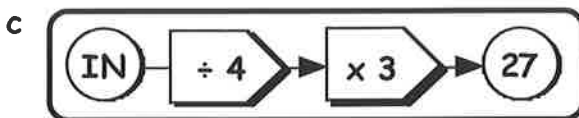
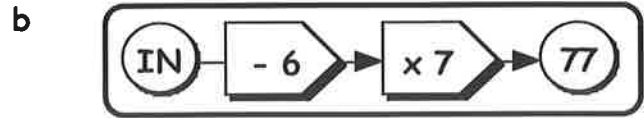
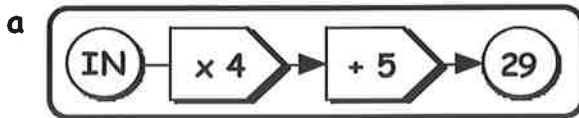
Exercise 1

1. Look at these number machines. Write down what number comes OUT :-

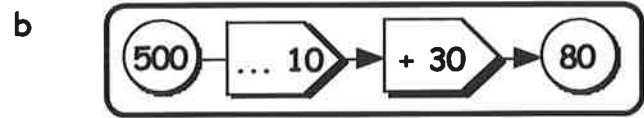
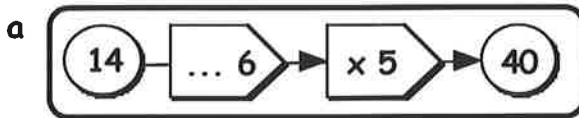




2. For these number machines, write down what number must have gone IN :-



3. Write down the missing sign in these two machines :-



Exercise 2

1. Write down each equation and solve it :-

a $x + 7 = 13$

b $x - 4 = 18$

c $x + 9 = 26$

d $x - 12 = 13$

e $x - 24 = 61$

f $7 + x = 21$

g $23 + x = 33$

h $9 - x = 1$

i $50 - x = 37$

j $2x = 18$

k $5x = 40$

l $7x = 77$

m $9x = 54$

n $20x = 300$

o $2x = 11$

p $4x = 34$

q $8x = 20$

r $\frac{1}{2}x = 25.$

Exercise 3

1. Solve :-

a $2x + 1 = 13$

b $2x - 6 = 2$

c $3x + 5 = 14$

d $3x - 9 = 12$

e $4x + 7 = 27$

f $4x - 5 = 39$

g $6x + 1 = 55$

h $8x - 1 = 79$

i $10x + 2 = 122$

j $3x + 4 = 13$

k $4x + 8 = 28$

l $5x - 3 = 37.$

- | | | | | | |
|------|----------------|---|-----------------|---|-------------------------|
| 1. m | $6x - 9 = 39$ | n | $7x + 10 = 52$ | o | $8x - 30 = 90$ |
| p | $9x - 180 = 0$ | q | $10x - 10 = 10$ | r | $2x - 7 = 0$ |
| s | $4x + 1 = 23$ | t | $8x + 60 = 4$ | u | $\frac{1}{2}x - 9 = 2.$ |

2. There were p toffees in a box. 12 were removed.

I then found that there were 13 left.

- a Make up an equation about the toffees.
 b Now solve it to determine how many there were to begin with.



Exercise 4

1. Copy the following as shown and place a "<" sign or a ">" sign between the numbers :-
- | | | | | | |
|---|-------------------|---|-------------------|---|---------------------------|
| a | $7 \dots 3$ | b | $4 \dots 12$ | c | $0 \dots -3$ |
| d | $-48 \dots 73$ | e | $5 \dots -2$ | f | $-11 \dots -13$ |
| g | $-123 \dots -121$ | h | $-232 \dots -231$ | i | $15 \dots 14\frac{3}{4}.$ |
2. Rewrite the following pairs of numbers and put in the correct sign :-
- | | | | | | |
|---|----------------------|---|---------------------|---|----------------------|
| a | 14 and 5, using "<" | b | 6 and 7 using ">" | c | 23 and 21, using "<" |
| d | -9 and -7, using ">" | e | -4 and 4, using ">" | f | 8 and -2 using "<" |
3. Solve these inequalities, choosing x only from the numbers {0, 1, 2, 3, 4 or 5}.
- | | | | | | |
|---|------------|---|------------|---|-------------|
| a | $x > 3$ | b | $x < 2$ | c | $x \geq 4$ |
| d | $x \leq 2$ | e | $x > 1$ | f | $x \leq 5$ |
| g | $x > 5$ | h | $x \geq 0$ | i | $x \leq 0.$ |
4. Make up an inequality for this statement :-
 "The minimum number of players for five-a-sides is 10.
 A pitch was booked for P players. $\Rightarrow P \dots\dots\dots$ "

Exercise 5

1. Solve the inequalities, leaving your answer in the form e.g. $x \geq 2$.
- | | | | | | |
|---|-----------|---|--------------|---|--------------|
| a | $2x > 16$ | b | $3x < 27$ | c | $5x > 40$ |
| d | $6x < 54$ | e | $7x \geq 35$ | f | $9x \leq 90$ |

1. g $8x \geq 104$ h $10x \leq 45$ i $20x > 200$
 j $\frac{1}{2}x < 20$ k $\frac{1}{4}x \geq 50$ l $\frac{1}{3}x - 1 \leq 5$.

2. Make up an inequality for this story and solve it :-

Joe and Helen are saving up for a TV, priced £819.

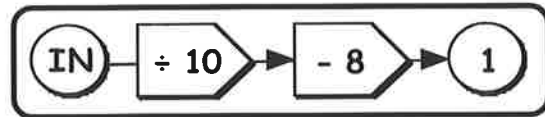
Joe has saved £y and Helen has saved £550.

At this moment, they don't have enough to buy the TV. =>



Revision Exercise

1. What number must have gone into this number machine ?



2. Write the sign (+, -, ÷, ×) that * stands for each time here :-

a $7 * 3 = 21$

b $29 * 14 = 15$

c $117 * 3 = 39$.

3. Solve these equations to find the value of x.

a $x + 4 = 12$

b $x - 9 = 11$

c $x + 25 = 32$

d $x - 14 = 49$

e $3x = 33$

f $\frac{1}{3}x = 8$.

4. There were 85 people in a cinema. x more arrived just after the movie began, giving a full house of 125.

a Make up an equation about the people in the cinema.

b Solve the equation to find how many people must have arrived late.



5. Copy the following and put the correct "<" sign or ">" sign between the numbers.

a $28 \dots 29$

b $7 \dots -7$

c $-414 \dots -144$.

6. In this question you can choose x only from the numbers $\{-3, -2, -1, 0, 1, 2, 3\}$

Write down the solutions for :-

a $x > -3$

b $x < -1$

c $x \leq 2$

d $x > -1\frac{1}{3}$.

7. Solve the following inequalities, leaving your answer in the form e.g. $x > 2$ etc.

a $x + 9 > 14$

b $x - 11 < 7$

c $8x \leq 72$

d $4x + 8 \geq 50$.