Find the input given the output

1 Complete the sentences.

a) The inverse of addition is subtraction.

b) The inverse of division is multiplication.

c) The inverse of squaring is square root.

2 Complete the function machines.

a)

input		output
10	+ 10	20

c)

input		output
2	× 10	20

b)

input		output
30	– 10	20

d)

input		output
200	÷ 10	20

Explain the method you used to find the inputs.

Inverse operations.

3 Annie has found the input for the function machine when the output is 4

input		output
16	squared	4

What mistake has Annie made?

She hasn't used the inverse.

4 Complete the function machines.

a)

input		output
93	– 57	36

b)

input		output
324	÷ 9	36

c)

input		output
17	+ 19	36

d)

input		output
6	squared	36

e)

input		output
28·8	× 1.25	36

f)

input		output
4·5	× 8	36

5 Find the input for these function machines if the output for each of them is 400

a)

input		output
328	+ 72	400

b)

input		output
80	× 5	400

c)

input		output
800	÷ 2	400

d)

input		output
459	– 59	400

e)

input		output
600	÷ 1.5	400

f)

input		output
20	squared	400

6 Find the input for these function machines if the output for each of them is 78.2

a)

input		output
178·2	→ subtract 100 →	78·2

b)

input		output
−21·8	→ added to 100 →	78·2

c)

input		output
21·8	→ subtracted from 100 →	78·2

7 Find the inputs of the function machines.

a)

input		output
29	→ − 7 →	22

b)

input		output
1	→ ÷ 2 →	$\frac{1}{2}$

c)

input		output
5·5	→ × 2 →	11

d)

input		output
100	→ $\sqrt{}$ →	10

8 Complete the function machines.

a)

input		output
4	→ × 4 →	16

b)

input		output
4	→ + 12 →	16

c)

input		output
4	→ ÷ $\frac{1}{4}$ →	16

d)

input		output
4	→ − −12 →	16

9 Write different operations to complete the function machines, using the given inputs.

a) The input is less than 50

E.g.

input		output
20	→ × 5 →	100

input		output
72	→ +28 →	100

b) The input is more than 200

E.g.

input		output
400	→ ÷ 4 →	100

input		output
10,000	→ $\sqrt{}$ →	100

c) The input is between 60 and 70

E.g.

input		output
61	→ +39 →	100

input		output
68	→ +32 →	100

d) The input is less than 0

E.g.

input		output
−1	→ +101 →	100

input		output
−10	→ squared →	100