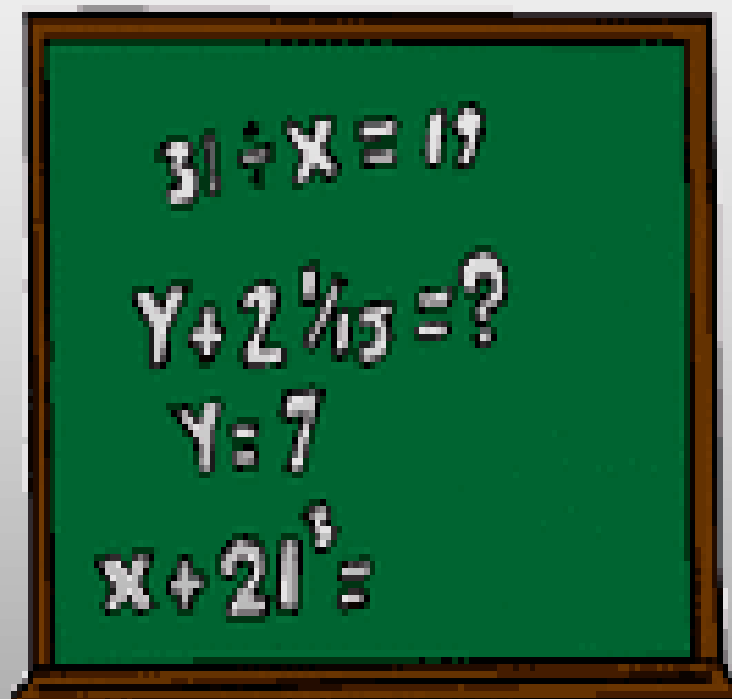


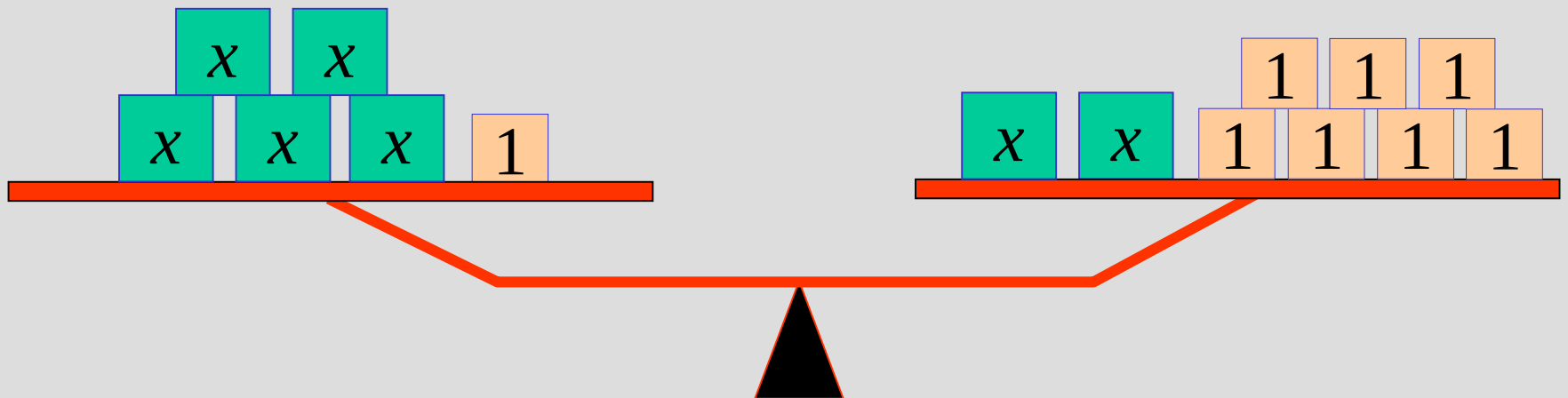
EQUATIONS



Example 1

Solve $5x + 1 = 2x + 7$

Removing the same weights from BOTH sides will keep the scales balanced



This leaves us with:
 $3x = 6$

Which means that:
 $x = 2$

To check if this is correct:

put $x = 2$

$$5x + 1 = 5 \times 2 + 1 = 10 + 1 = \underline{\underline{11}}$$

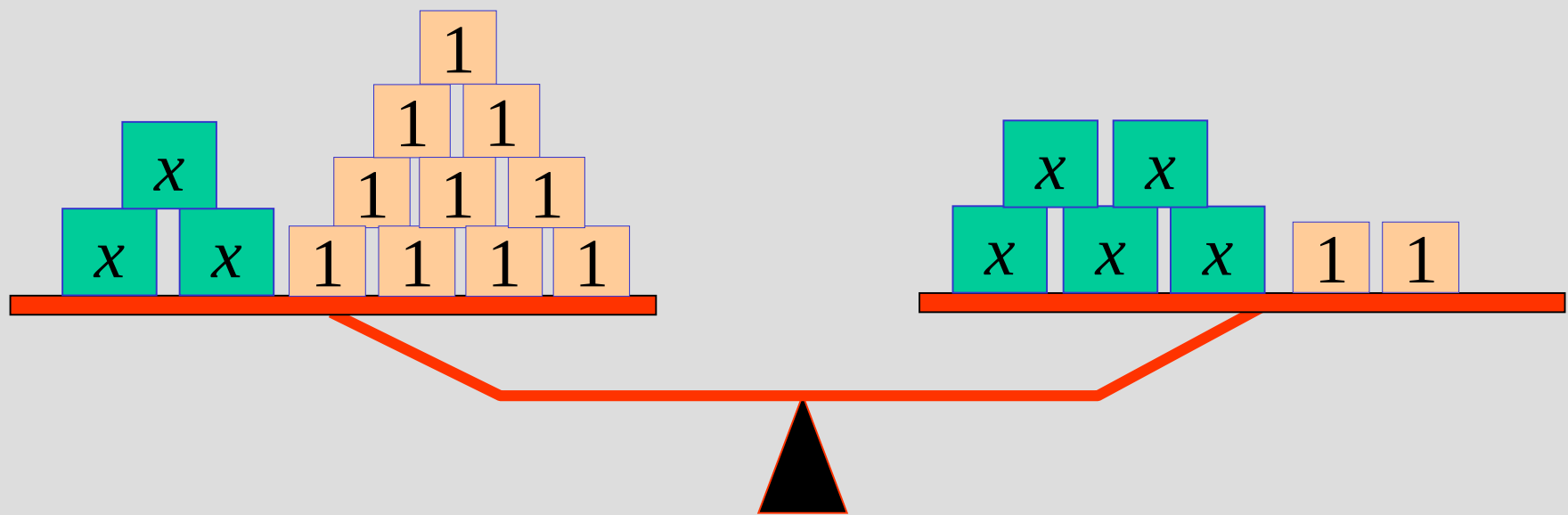
$$2x + 7 = 2 \times 2 + 7 = 4 + 7 = \underline{\underline{11}}$$



Example 2

Solve $3x + 10 = 5x + 2$

Removing the same weights from BOTH sides will keep the scales balanced



This leaves us with:
 $8 = 2x$

Which means that:
 $4 = x$

WORKSHEET

Solve the following equations.

ANSWERS

1) $3x + 1 = 2x + 11$

SOLUTION

2) $3x - 1 = 2x + 11$

SOLUTION

3) $2x + 1 = x + 9$

SOLUTION

4) $2x - 1 = x + 9$

SOLUTION

5) $5x + 2 = 3x + 8$

SOLUTION

6) $5x - 2 = 3x + 8$

SOLUTION

7) $4x + 5 = x + 20$

SOLUTION

8) $2x - 5 = x + 7$

SOLUTION

9) $4x - 6 = 2x + 6$

SOLUTION

10) $5x + 10 = 2x + 40$

SOLUTION

Solve the following equations.

ANSWERS

11) $3x + 12 = 5x + 4$

SOLUTION

12) $2x + 12 = 8x - 18$

SOLUTION

13) $3x + 16 = 4x + 5$

SOLUTION

14) $2x + 8 = 3x - 2$

SOLUTION

15) $2x + 11 = 5x + 2$

SOLUTION

16) $2x + 7 = 5x - 5$

SOLUTION

17) $x + 6 = 6x + 1$

SOLUTION

18) $2x + 11 = 6x + 3$

SOLUTION

19) $x + 17 = 5x - 3$

SOLUTION

20) $2x + 16 = 5x + 7$

SOLUTION

WORKSHEET

Solve the following equations.

ANSWERS

21) $3x + 4 = 25 - 4x$

SOLUTION

22) $10 + x = 19 - 2x$

SOLUTION

23) $3x + 2 = 12 - 2x$

24) $2x - 1 = 11 - x$

25) $7x - 3 = 7 - 3x$

26) $6x - 14 = 10 - 2x$

27) $4x + 1 = 11 - x$

28) $2x + 7 = 35 - 5x$

29) $12 + 3x = 28 - x$

30) $12 + x = 24 - x$

WORKSHEET

Solve the following equations.

ANSWERS

31) $15 - 2x = x + 3$

32) $24 - 2x = 3x - 6$

33) $40 - 5x = 7 + 6x$

34) $100 - 6x = 3x + 10$

35) $12 - x = x - 6$

36) $8 - 10x = 2x - 4$

37) $14 - 3x = 2x + 4$

38) $32 - 5x = 3x + 8$

39) $1 - 6x = 3x - 8$

40) $22 - 8x = x - 5$

WORKSHEET

Solve the following equations.

ANSWERS

41) $10 + 2x = 14 + x$

42) $5x - 6 = 2x + 9$

43) $12x - 2 = 24 - x$

44) $12 - 3x = 2 + 2x$

45) $8 + 3x = 36 - 4x$

46) $25 - 2x = 7 + 4x$

47) $12 + 3x = 18 + x$

48) $25 + x = 13 + 3x$

49) $3x + 2 = 5x - 14$

50) $10x - 10 = 6x + 14.$

EXTENSION

Solve the following equations.

ANSWERS

1) $5x - 8 = 4x - 1$

2) $2x + 12 = 3 - x$

3) $3x - 8 = 6x + 4$

4) $3x + 12 = x + 2$

5) $6x - 12 = x - 2$

6) $2x - 3 = 5x + 21$

7) $12 - 2x = 15 - 3x$

8) $10 - x = 16 - 7x$

9) $12 - 4x = 3 - x$

10) $12 + 3x = 12 + x$

SOLUTION

$$3x + 1 = 2x + 11$$

subtract $2x$ from both sides:

$$x + 1 = 11$$

subtract 1 from both sides:

$$x = 10$$



SOLUTION

$$3x - 1 = 2x + 11$$

subtract $2x$ from both sides:

$$x - 1 = 11$$

add 1 to both sides:

$$x = 12$$



SOLUTION

$$2x + 1 = x + 9$$

subtract x from both sides:

$$x + 1 = 9$$

subtract 1 from both sides:

$$x = 8$$



SOLUTION

$$2x - 1 = x + 9$$

subtract x from both sides:

$$x - 1 = 9$$

add 1 to both sides:

$$x = 10$$



SOLUTION

$$5x + 2 = 3x + 8$$

subtract $3x$ from both sides:

$$2x + 2 = 8$$

subtract 2 from both sides:

$$2x = 6$$

divide by 2:

$$x = 3$$



SOLUTION

$$5x - 2 = 3x + 8$$

subtract $3x$ from both sides:

$$2x - 2 = 8$$

add 2 to both sides:

$$2x = 10$$

divide by 2 :

$$x = 5$$



SOLUTION

$$4x + 5 = x + 20$$

subtract x from both sides:

$$3x + 5 = 20$$

subtract 5 from both sides:

$$3x = 15$$

divide by 3:

$$x = 5$$



SOLUTION

$$2x - 5 = x + 7$$

subtract x from both sides:

$$x - 5 = 7$$

add 5 to both sides:

$$x = 12$$



SOLUTION

$$4x - 6 = 2x + 6$$

subtract $2x$ from both sides:

$$2x - 6 = 6$$

add 6 to both sides:

$$2x = 12$$

divide by 2 :

$$x = 6$$



SOLUTION

$$5x + 10 = 2x + 40$$

subtract $2x$ from both sides:

$$3x + 10 = 40$$

subtract 10 from both sides:

$$3x = 30$$

divide by 3 :

$$x = 10$$



SOLUTION

$$3x + 12 = 5x + 4$$

subtract $3x$ from both sides:

$$12 = 2x + 4$$

subtract 4 from both sides:

$$8 = 2x$$

divide by 2:

$$4 = x$$



SOLUTION

$$2x + 12 = 8x - 18$$

subtract $2x$ from both sides:

$$12 = 6x - 18$$

add 18 to both sides:

$$30 = 6x$$

divide by 6:

$$5 = x$$



SOLUTION

$$3x + 16 = 4x + 5$$

subtract 3x from both sides:

$$16 = x + 5$$

subtract 5 from both sides:

$$11 = x$$



SOLUTION

$$2x + 8 = 3x - 2$$

subtract $2x$ from both sides:

$$8 = x - 2$$

add 2 to both sides:

$$10 = x$$



SOLUTION

$$2x + 11 = 5x + 2$$

subtract $2x$ from both sides:

$$11 = 3x + 2$$

subtract 2 from both sides:

$$9 = 3x$$

divide by 3:

$$3 = x$$



SOLUTION

$$2x + 7 = 5x - 5$$

subtract $2x$ from both sides:

$$7 = 3x - 5$$

add 5 to both sides:

$$12 = 3x$$

divide by 3 :

$$4 = x$$



SOLUTION

$$x + 6 = 6x + 1$$

subtract x from both sides:

$$6 = 5x + 1$$

subtract 1 from both sides:

$$5 = 5x$$

divide by 5:

$$1 = x$$



SOLUTION

$$2x + 11 = 6x + 3$$

subtract $2x$ from both sides:

$$11 = 4x + 3$$

subtract 3 from both sides:

$$8 = 4x$$

divide by 4:

$$2 = x$$



SOLUTION

$$x + 17 = 5x - 3$$

subtract x from both sides:

$$17 = 4x - 3$$

add 3 to both sides:

$$20 = 4x$$

divide by 4:

$$5 = x$$



SOLUTION

$$2x + 16 = 5x + 7$$

subtract $2x$ from both sides:

$$16 = 3x + 7$$

subtract 7 from both sides:

$$9 = 3x$$

divide by 3 :

$$3 = x$$



SOLUTION

$$3x + 4 = 25 - 4x$$

ADD 4x to both sides:

$$7x + 4 = 25$$

subtract 4 from both sides:

$$7x = 21$$

divide by 7:

$$x = 3$$



SOLUTION

$$10 + x = 19 - 2x$$

ADD 2x to both sides:

$$10 + 3x = 19$$

subtract 10 from both sides:

$$3x = 9$$

divide by 3:

$$x = 3$$



ANSWERS



1) 10
2) 12
3) 8
4) 10
5) 3
6) 5
7) 5
8) 12
9) 6
10) 10
11) 4
12) 5
13) 11
14) 10
15) 3
16) 4
17) 1
18) 2
19) 5
20) 3

21) 3
22) 3
23) 2
24) 4
25) 1
26) 3
27) 2
28) 4
29) 4
30) 6
31) 4
32) 6
33) 3
34) 10
35) 9
36) 1
37) 2
38) 3
39) 1
40) 3

41) 4
42) 5
43) 2
44) 2
45) 4
46) 3
47) 3
48) 6
49) 8
50) 6

1) 7
2) -3
3) -4
4) -5
5) 2
6) -8
7) 3
8) 1
9) 3
10) 0