EQUATIONS WITH ERRORS

Some of the following solutions contain mistakes.

Copy each question and circle each mistake that you find. Then give a correct solution.

Take care, some solutions contain more than one mistake. Also, some lines contain more than one mistake!

1)
$$3x + 6 = 18$$
$$3x = 24$$
$$x = 8$$

2)
$$5x - 10 = 15$$
$$5x = 5$$
$$x = 1$$

3)
$$4x + 3 = 2x + 11$$
$$2x + 3 = 11$$
$$2x = 14$$
$$x = 28$$

4)
$$5x - 3 = 2x + 24$$
$$7x - 3 = 24$$
$$7x = 21$$
$$x = 3$$

5)
$$3x + 5 = 2x + 20$$
$$5x + 5 = 20$$
$$5x = 25$$
$$x = 20$$

6)
$$7x - 8 = 3x + 28$$
$$10x - 8 = 28$$
$$10x = 20$$
$$x = 10$$

7)
$$9x - 4 = x + 20$$
$$8x - 4 = 20$$
$$8x = 24$$
$$x = 3.$$

8)
$$3(x + 2) = 2x + 10$$
$$3x + 5 = 2x + 10$$
$$x + 5 = 10$$
$$x = 5.$$

9)
$$4(x + 3) = 2x + 17$$
$$4x + 7 = 2x + 17$$
$$6x + 7 = 17$$
$$6x = 24$$
$$x = 4.$$

10)
$$5x + 3 = 2x + 18$$
$$7x - 3 = 18$$
$$7x = 21$$
$$x = 3.$$

11)
$$2x + 18 = 5x - 3$$
$$7x - 18 = 3$$
$$7x = 21$$
$$x = 3.$$

12)
$$2 + 8x = 50$$
$$10x = 50$$
$$x = 5.$$

ANSWERS.

1) 1 mistake.
$3x = 24$ should be $3x = 12$.
Correct answer $x = 4$.

2) 1 mistake.
$5x = 5$ should be $5x = 25$.
Correct answer $x = 5$.

3) 2 mistakes.
$2x = 14$ should be $2x = 8$.
$x = 28$ should be $x = 7$.
Correct answer $x = 4$.

4) 2 mistakes.
$7x - 3 = 24$ should be $3x - 3 = 24$.
$7x = 21$ should be $7x = 27$.
Correct answer $x = 9$.

5) 3 mistakes.
$5x + 5 = 20$ should be $x + 5 = 20$.
$5x = 25$ should be $5x = 15$.
$x = 20$ should be $x = 5$.
Correct answer $x = 15$.

6) 3 mistakes.
$10x - 8 = 28$ should be $4x - 8 = 28$.
$10x = 20$ should be $10x = 36$.
$x = 10$ should be $x = 2$.
Correct answer $x = 9$.

7) No mistakes.

8) 1 mistake.
$3x + 5 = 2x + 10$ should be $3x + 6 = 2x + 10$.
Correct answer $x = 4$.

9) 3 mistakes.
$4x + 7 = 2x + 19$ should be $4x + 12 = 2x + 19$.
$6x + 7 = 17$ should be $2x + 7 = 17$.
$6x = 24$ should be $6x = 10$.
Correct answer $x = 2.5$.

10) 2 mistakes in the same line!
$7x - 3 = 18$ should be $3x + 3 = 18$.
Correct answer $x = 5$.

11) 3 mistakes in the same line.
$7x - 18 = 3$ should be $18 = 3x - 3$.
Correct answer $x = 7$.

12) 1 mistake.
$10x = 50$ is simply invalid. Cannot add the 2 and $8x$ to get $10x$.
Instead
$$\begin{aligned} 2 + 8x &= 50 \\ 8x &= 48 \\ x &= 6. \end{aligned}$$