

Equations worksheet

Name: Answers

Grand total: / 96

$$\text{a. } x + 3 = 9 \quad x = 9 - 3 \quad \underline{\underline{x = 6}}$$

$$\text{b. } x + 7 = 20 \quad x = 20 - 7 \quad \underline{\underline{x = 13}}$$

$$\text{c. } x + 5 = 8 \quad x = 8 - 5 \quad \underline{\underline{x = 3}}$$

$$\text{d. } x + 9 = 9 \quad x = 9 - 9 \quad \underline{\underline{x = 0}}$$

$$\text{e. } x + 2 = 7 \quad x = 7 - 2 \quad \underline{\underline{x = 5}}$$

$$\text{f. } x - 5 = 1 \quad x = 1 + 5 \quad \underline{\underline{x = 6}}$$

$$\text{g. } x - 15 = 0 \quad x = 0 + 15 \quad \underline{\underline{x = 15}}$$

$$\text{h. } x - 50 = 40 \quad x = 40 + 50 \quad \underline{\underline{x = 90}}$$

$$\text{i. } x + 6 = 4 \quad x = 4 - 6 \quad \underline{\underline{x = -2}}$$

$$\text{j. } x - 5 = 0 \quad x = 0 + 5 \quad \underline{\underline{x = 5}}$$

$$\text{k. } x + 11 = 0 \quad x = 0 - 11 \quad \underline{\underline{x = -11}}$$

$$\text{l. } x - 22 = 28 \quad x = 28 + 22 \quad \underline{\underline{x = 50}}$$

$$\text{m. } 8 + x = 5 \quad x = 5 - 8 \quad \underline{\underline{x = -3}}$$

$$\text{n. } 1 + x = 1 \quad x = 1 - 1 \quad \underline{\underline{x = 0}}$$

$$\text{o. } 7 + x = 0 \quad x = 0 - 7 \quad \underline{\underline{x = -7}}$$

$$\text{p. } 10 + x = 3 \quad x = 3 - 10 \quad \underline{\underline{x = -7}}$$

$$\text{q. } 6 + x = 6 \quad x = 6 - 6 \quad \underline{\underline{x = 0}}$$

$$\text{r. } 15 + x = -15 \quad x = -15 - 15 \quad \underline{\underline{x = -30}}$$

2. Multiplication: solve for x .

/18

a. $2x = 18$ $x = \frac{18}{2}$ $x = 9$

b. $5x = 30$ $x = \frac{30}{5}$ $x = 6$

c. $3x = 12$ $x = \frac{12}{3}$ $x = 4$

d. $3x = 18$ $x = \frac{18}{3}$ $x = 6$

e. $4x = 32$ $x = \frac{32}{4}$ $x = 8$

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

g. $6x = 15$ $x = \frac{15}{6}^{(3)}$ $x = \frac{5}{2}$ OR $x = 2,5$

h. $9x = 0$ $x = \frac{0}{9}$ $x = 0$

i. $2x = 1$ $x = \frac{1}{2}$ OR $x = 0,5$

j. $3x = 150$ $x = \frac{150}{3}$ $x = 50$

k. $10x = 180$ $x = \frac{180}{10}$ $x = 18$

l. $6x = 27$ $x = \frac{27}{6}^{(3)}$ $x = \frac{9}{2}$ OR $x = 4,5$

m. $4x = 12$ $x = \frac{12}{4}$ $x = 3$

n. $7x = 21$ $x = \frac{21}{7}$ $x = 3$

o. $10x = 35$ $x = \frac{35}{10}$ $x = 3,5$

p. $8x = 6$ $x = \frac{6}{8}^{(2)}$ $x = \frac{3}{4}$ OR $x = 0,75$

q. $4x = 25$ $x = \frac{25}{4}$

r. $6x = 17$ $x = \frac{17}{6}$

3. Solve for x.

/18

$$\text{a. } 3x + 1 = 13 \quad 3x = 13 - 1 = 12 \quad x = \frac{12}{3} = \underline{\underline{4}}$$

$$\text{b. } 4x + 3 = 23 \quad 4x = 23 - 3 = 20 \quad x = \frac{20}{4} = \underline{\underline{5}}$$

$$\text{c. } 6x + 2 = 38 \quad 6x = 38 - 2 = 36 \quad x = \frac{36}{6} = \underline{\underline{6}}$$

$$\text{d. } 2x + 5 = 9 \quad 2x = 9 - 5 = 4 \quad x = \frac{4}{2} = \underline{\underline{2}}$$

$$\text{e. } 7x - 3 = 32 \quad 7x = 32 + 3 = 35 \quad x = \frac{35}{7} = \underline{\underline{5}}$$

$$\text{f. } 5x - 2 = 48 \quad 5x = 48 + 2 = 50 \quad x = \frac{50}{5} = \underline{\underline{10}}$$

$$\text{g. } 8x - 6 = 50 \quad 8x = 50 + 6 = 56 \quad x = \frac{56}{8} = \underline{\underline{7}}$$

$$\text{h. } 4x - 8 = 0 \quad 4x = 0 + 8 = 8 \quad x = \frac{8}{4} = \underline{\underline{2}}$$

$$\text{i. } 10x - 7 = 63 \quad 10x = 63 + 7 = 70 \quad x = \frac{70}{10} = \underline{\underline{7}}$$

$$\text{j. } 7x - 3 = 46 \quad 7x = 46 + 3 = 49 \quad x = \frac{49}{7} = \underline{\underline{7}}$$

$$\text{k. } 3x + 11 = 14 \quad 3x = 14 - 11 = 3 \quad x = \frac{3}{3} = \underline{\underline{1}}$$

$$\text{l. } 8x - 1 = 79 \quad 8x = 79 + 1 = 80 \quad x = \frac{80}{8} = \underline{\underline{10}}$$

$$\text{m. } 9x - 10 = 17 \quad 9x = 17 + 10 = 27 \quad x = \frac{27}{9} = \underline{\underline{3}}$$

$$\text{n. } 5x + 21 = 21 \quad 5x = 21 - 21 = 0 \quad x = \frac{0}{5} = \underline{\underline{0}}$$

$$\text{o. } 2x - 3 = 55 \quad 2x = 55 + 3 = 58 \quad x = \frac{58}{2} = \underline{\underline{29}}$$

$$\text{p. } 11x + 11 = 0 \quad 11x = 0 - 11 = -11 \quad x = -\frac{11}{11} = \underline{\underline{-1}}$$

$$\text{q. } 2x - 7 = 0 \quad 2x = 0 + 7 = 7 \quad x = \frac{7}{2} = \underline{\underline{3.5}}$$

$$\text{r. } \frac{1}{3}x - 1 = 0 \quad \frac{1}{3}x = 0 + 1 = 1 \quad x = 1 \div \frac{1}{3} = 1 \cdot 3 = \underline{\underline{3}}$$

4. Solve for x .

/8

a. $4x + 1 = 2x + 7$

$$4x - 2x = 7 - 1$$

$$2x = 6$$

$$x = \frac{6}{2} = \underline{\underline{3}}$$

b. $3x + 5 = x + 15$

$$3x - x = 15 - 5$$

$$2x = 10$$

$$x = \frac{10}{2} = \underline{\underline{5}}$$

c. $6x + 7 = 5x + 13$

$$6x - 5x = 13 - 7$$

$$x = \underline{\underline{6}}$$

d. $10x - 6 = 7x + 9$

$$10x - 7x = 9 + 6$$

$$3x = 15$$

$$x = \frac{15}{3} = \underline{\underline{5}}$$

5. Solve for x .

/8

a. $4x + 1 = 2(x + 1)$

$$4x + 1 = 2x + 2$$

$$4x - 2x = 2 - 1$$

$$2x = 1$$

$$\underline{\underline{x = \frac{1}{2}}} \text{ OR } \underline{\underline{x = 0,5}}$$

b. $3(x + 5) = x + 15$

$$3x + 15 = x + 15$$

$$3x - x = 15 - 15$$

$$2x = 0$$

$$x = \frac{0}{2} = \underline{\underline{0}}$$

c. $6x + 7 = 5(x - 3)$

$$6x + 7 = 5x - 15$$

$$6x - 5x = -15 - 7$$

$$x = \underline{\underline{-22}}$$

d. $10(x - 6) = 7x + 9$

$$10x - 60 = 7x + 9$$

$$10x - 7x = 9 + 60$$

$$3x = 69$$

$$x = \frac{69}{3} = \underline{\underline{23}}$$

6. Solve for x .

/8

a. $4x + 1 - x = 2x + 7 + x - 6$

$$3x + 1 = 3x + 1$$

$$3x - 3x = 1 - 1$$

$$\underline{\underline{0 = 0}}$$

b. $3x + 5 = x + 15 + 2x$

$$3x + 5 = 3x + 15$$

$$3x - 3x = 15 - 5$$

$$\underline{\underline{0 = 10}}$$

c. $6x + 7 + x = 5x + 13 - 4$

$$7x + 7 = 5x + 9$$

$$7x - 5x = 9 - 7$$

$$2x = 2$$

$$x = \frac{2}{2} = \underline{\underline{1}}$$

d. $10x - 6 - 2x = 7x + 9 + x + 3$

$$8x - 6 = 8x + 12$$

$$8x - 8x = 12 + 6$$

$$\underline{\underline{0 = 18}}$$

$$\text{a. } x^2 = 16 \quad x = \pm \sqrt{16} = \pm 4$$

$$\text{b. } x^2 = 36 \quad x = \pm \sqrt{36} = \pm 6$$

$$\text{c. } x^2 = 256 \quad x = \pm \sqrt{256} = \pm 16$$

$$\text{d. } x^2 = 400 \quad x = \pm \sqrt{400} = \pm 20$$

$$\text{e. } x^2 = 1024 \quad x = \pm \sqrt{1024} = \pm 32$$

$$\text{f. } x^2 = 3600 \quad x = \pm \sqrt{3600} = \pm 60$$

$$\text{g. } x^2 = 250\,000 \quad x = \pm \sqrt{250\,000} = \pm 500$$

$$\text{h. } x^2 = \frac{4}{9} \quad x = \pm \sqrt{\frac{4}{9}} = \pm \frac{2}{3}$$

$$\text{i. } x^2 = 10,24 \quad x = \pm \sqrt{10,24} = \pm 3,2$$

$$\text{j. } 3x^2 = 27 \quad x^2 = \frac{27}{3} = 9 \quad x = \pm \sqrt{9} = \pm 3$$

$$\text{k. } x^2 = 27 \quad x = \pm \sqrt{27}$$

$$\text{l. } x^2 = 1 \quad x = \pm \sqrt{1} = \pm 1$$

$$\text{m. } x^2 = 0,01 \quad x = \pm \sqrt{0,01} = \pm 0,1$$

$$\text{n. } x^2 = 0,04 \quad x = \pm \sqrt{0,04} = \pm 0,2$$

$$\text{o. } x^2 = 0,05 \quad x = \pm \sqrt{0,05} = \pm 0,1\sqrt{5}$$

$$\text{p. } x^2 = -16 \quad \text{impossible}$$

$$\text{q. } x^2 - 25 = 0 \quad x^2 = 0 + 25 = 25 \quad x = \pm \sqrt{25} = \pm 5$$

$$\text{r. } x^2 + 36 = 0 \quad x^2 = 0 - 36 = -36 \quad \text{impossible}$$