



Seventh Grade - Expression and Equation

1) Simplify the following expressions

$$\frac{5x}{3} \times 15$$

- 22x
- 34x
- 56x
- 25x

2) Simplify the following expressions

$$-\frac{3}{5}u \times (-20v)$$

- 12uv
- 32uv
- 24uv
- 18uv

3) Simplify the following expressions

$$\frac{2}{3}y^3 + \frac{1}{4}y^3$$

a) $\frac{17}{30}y^3$ b) $\frac{27}{11}y^3$ c) $\frac{11}{12}y^3$ d) $\frac{37}{30}y^3$

- c
- d
- a
- b



4) Simplify the following expressions

$$\frac{2}{7}b^4 + \frac{1}{14}b^4$$

a) $\frac{5}{25}b^4$ b) $\frac{7}{10}b^4$ c) $\frac{5}{14}b^4$ d) $\frac{3}{15}b^4$

- b
- c
- a
- d

5) Simplify the following expressions

i) $\left(\frac{3}{5}y^3\right)\left(\frac{2}{7}y^3\right)$, ii) $\frac{3}{5}y^2 + \frac{2}{7}y^2$

(a) i) $\frac{6}{35}y^6$, ii) $\frac{31}{35}y^2$ (b) i) $\frac{7}{10}y^6$, ii) $\frac{4}{10}y^2$

(c) i) $\frac{2}{11}y^6$, ii) $\frac{4}{12}y^2$ (d) i) $\frac{5}{25}y^6$, ii) $\frac{3}{15}y^2$

- a
- b
- d
- c

6) Simplify the following expressions

$$\frac{4}{5}x^2 + x^2 - \frac{3}{7}x^2$$



- $(35/48) x^2$
- $(28/35) x^2$
- $(48/35) x^2$
- $(48/35) x^3$

7) Simplify the following expressions

$$\frac{3(y+1)}{5} + 1 - y$$

- $(4 - 3y) / 9$
- $(3 - 2y) / 9$
- $(8 - 2y) / 5$
- $(6 - 3y) / 8$

8) Simplify the following expressions

$$5 - 4 \left[\frac{3}{4}x + 2y \right] + \frac{7}{5}y - 10x - 11$$

(a) $\frac{47}{5}y - 13x - 6$ (b) $\frac{27}{10}y - 19x - 8$

(c) $\frac{45}{12}y - 27x - 9$ (d) $\frac{39}{5}y - 25x - 7$

- a
- d
- c
- b

9) Simplify the following expressions



$$5ab + \frac{3}{4}bc - 2\frac{1}{2}ab + \frac{1}{4}cb$$

$$(a) \frac{5}{2}ab+bc \quad (b) \frac{1}{4}ab+bc$$

$$(c) \frac{2}{3}ab-bc \quad (d) \frac{5}{9}ab-bc$$

- d
- c
- a
- b

10) Simplify the following expressions

$$\frac{5(p-q)}{2} - \frac{2q-p}{14} - \frac{2(p+q)}{7}$$

- $(52p-41q) / 18$
- $(22p-41q) / 13$
- $(41p-21q) / 18$
- $(32p-41q) / 14$

11) Express the following as a single fraction in its simplest form

$$\frac{x}{3} + \frac{2x}{5} - \frac{5x}{6}$$

- $-x/13$
- $x/14$
- $-x/10$
- $-x/12$



12) Express the following as a single fraction in its simplest form

$$5e - \frac{3e - 4}{2} + \frac{e - 7}{3}$$

- $(35e - 2) / 5$
- $(43e - 4) / 9$
- $(33e - 2) / 7$
- $(23e - 2) / 6$

13) Express the following as a single fraction in its simplest form

$$\frac{x+1}{2} + \frac{x+3}{3} - \frac{5x-1}{6}$$

- $1/2$
- $5/3$
- $2/3$
- $1/4$

14) Express the following as a single fraction in its simplest form

$$\frac{2(p - 4q)}{3} - \frac{3(2p + 9)}{2}$$

- $(-14p - 16q - 81) / 6$
- $(-12p - 14q - 81) / 5$
- $(-32p - 31q - 81) / 7$
- $(-24p - 24q - 41) / 5$

15) Express the following as a single fraction in its simplest form

$$\frac{2(a - b)}{7} - \frac{2a + 3b}{14} + \frac{a + b}{2}$$



- $5a/16$
- $8a/13$
- $9a/14$
- $6a/19$

16) Express the following as a single fraction in its simplest form

$$\frac{1}{2}a + b - \frac{3}{5}(a - b)$$

- $(-a + 13b) / 14$
- $(-a + 26b) / 15$
- $(-a + 11b) / 21$
- $(-a + 16b) / 10$

17) Express the following as a single fraction in its simplest form

$$\frac{x-1}{4} - \frac{6-2x}{3} + \frac{x}{2}$$

- $(14x-11) / 19$
- $(13x-15) / 12$
- $(19x-19) / 21$
- $(12x-17) / 15$

18) Express the following as a single fraction in its simplest form

$$\frac{7q-4r}{3} - \frac{10q+4r}{9}$$

- $(13q-12r) / 7$
- $(12q-13r) / 5$
- $(11q-16r) / 6$
- $(18q-14r) / 9$



19) Express the following as a single fraction in its simplest form

$$\frac{3a+1}{5} - \frac{3a-2}{10}$$

- $(6a + 5) / 16$
- $(7a + 5) / 18$
- $(4a + 2) / 12$
- $(3a + 4) / 10$

20) Express the following as a single fraction in its simplest form

$$\frac{2x+5}{3} - \frac{3x-2}{4}$$

- $(-x+23) / 15$
- $(-x+26) / 12$
- $(-2x+22) / 13$
- $(-x+27) / 19$

21) Solve the following linear equations with rational coefficients

$$\frac{2x+7}{4} = 12$$

- $30/4$
- $23/3$
- $41/2$
- $11/2$

22) Solve the following linear equations with rational coefficients



$$\frac{3}{5+2x} = 2$$

- $-(3/5)$
- $-(5/4)$
- $-(7/4)$
- $-(3/4)$

23) Solve the following linear equations with rational coefficients

$$\sqrt{2x+5} = 4$$

- $12/4$
- $21/3$
- $31/4$
- $11/2$

24) Solve the following linear equations with rational coefficients

$$\sqrt{x-1} = 2$$

- 9
- 3
- 2
- 5

25) Solve the following linear equations with rational coefficients

$$2 + \frac{y-4}{3y} = 1$$

- $2/3$
- $4/3$
- $3/4$



- 5/4

26) Solve the following linear equations with rational coefficients

$$(2x - 3)^3 = \frac{1}{27}$$

- 4/6
- 4/9
- 2/3
- 5/7

27) Solve the following linear equations with rational coefficients

$$\frac{x}{4} - 3 = 0$$

- 15
- 19
- 12
- 18

28) Solve the following linear equations with rational coefficients

$$\sqrt[3]{p} = 11$$

- 1331
- 3234
- 2344
- 1245

29) Solve the following linear equations with rational coefficients



$$3\sqrt{x} = 4$$

- $3\frac{1}{2}$
- $1\frac{1}{3}$
- $\frac{16}{9}$
- $2\frac{1}{4}$

30) Solve the following linear equations with rational coefficients

$$\frac{3}{t} = \frac{5}{t-4}$$

- $t = -7$
- $t = -9$
- $t = -6$
- $t = -5$