



## Seventh Grade - Expression and Equation

1) Simplify the following expressions

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

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

2) Simplify the following expressions

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

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

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)  $\frac{37}{30}y^3$

- b
- a
- d
- c



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)  $\frac{3}{15}b^4$

- a
- d
- b
- c

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)  $\frac{3}{15}y^2$

- d
- b
- a
- c

6) Simplify the following expressions

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



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

7) Simplify the following expressions

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

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

8) Simplify the following expressions

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

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

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

- c
- d
- a
- b

9) Simplify the following expressions



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

(a)  $\frac{5}{2}ab+bc$  (b)  $\frac{1}{4}ab+bc$   
(c)  $\frac{2}{3}ab-bc$  (d)  $\frac{5}{9}ab-bc$

- c
- d
- a
- b

10) Simplify the following expressions

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

22) Solve the following linear equations with rational coefficients



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

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

23) Solve the following linear equations with rational coefficients

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

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

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
- 5/4
- 4/3



- 3/4

26) Solve the following linear equations with rational coefficients

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

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

27) Solve the following linear equations with rational coefficients

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

- 15
- 12
- 18
- 19

28) Solve the following linear equations with rational coefficients

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

- 3234
- 2344
- 1245
- 1331

29) Solve the following linear equations with rational coefficients



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

- 31/2
- 16/9
- 11/3
- 21/4

30) Solve the following linear equations with rational coefficients

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

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