

ALGEBRA REVIEW WS1 – FRACTIONS & SOLVING EQUATIONS

EVALUATE EACH EXPRESSION WITHOUT A CALCULATOR. LEAVE ALL ANSWERS AS IMPROPER FRACTIONS.

1. $\frac{2}{5} + \frac{4}{5}$

$$\boxed{\frac{6}{5}}$$

2. $\frac{7}{8} - \frac{1}{8}$

$$\frac{6}{8} \div 2 = \frac{3}{4}$$

$$\boxed{\frac{3}{4}}$$

3. $\frac{9}{5} + \frac{1}{2}$

$$\frac{18}{10} + \frac{5}{10} = \boxed{\frac{23}{10}}$$

4. $\frac{8}{3} - (-\frac{3}{4})$

$$\frac{8}{3} + \frac{3}{4} = \frac{32}{12} + \frac{9}{12} = \boxed{\frac{41}{12}}$$

5. $\frac{7}{9} - \frac{2}{6}$

$$\frac{14}{18} - \frac{6}{18} = \frac{8}{18} = \boxed{\frac{4}{9}}$$

6. $6 - \frac{1}{6}$

$$\frac{36}{6} - \frac{1}{6} = \boxed{\frac{35}{6}}$$

7. $\frac{1}{3} \cdot \frac{3}{5}$

$$\frac{3}{15} = \boxed{\frac{1}{5}}$$

8. $\frac{4}{7} \cdot \frac{6}{5}$

$$\boxed{\frac{24}{35}}$$

9. $\frac{2}{5} \div \frac{4}{5}$

$$\frac{2}{5} \cdot \frac{5}{4} = \frac{2}{4} = \boxed{\frac{1}{2}}$$

10. $\frac{3}{8} \div \frac{1}{2}$

$$\frac{3}{8} \cdot \frac{2}{1} = \boxed{\frac{3}{4}}$$

11. $\frac{3}{4} \cdot \frac{4}{6} \cdot \frac{5}{5}$

$$\frac{3}{4} \cdot \frac{5}{6} = \frac{15}{24} = \boxed{\frac{5}{8}}$$

12. $\frac{12}{10} \cdot \frac{8}{3}$

$$\frac{96}{30} = \boxed{\frac{32}{10}}$$

SOLVE EACH EQUATION FOR THE INDICATED VARIABLE.

13. $7x - 13 = 22$

$$7x = 35$$

$$x = 5$$

14. $5 + 3x = 19$

$$3x = 14$$

$$x = 14/3$$

15. $2x + 0.25 = 4.75$

$$2x = 4.50$$

$$x = 2.25$$

16. $\frac{x+2}{7} = 8$

$$x+2 = 56$$

$$x = 54$$

17. $-7c + 9 = c + 1$

$$9 = 8c + 1$$

$$8 = 8c$$

$$c = 1$$

18. $4(2y - 4) = 5y + 2$

$$8y - 16 = 5y + 2$$

$$3y - 16 = 2$$

$$3y = 18$$

$$y = 6$$

19. $-6 - 2n = 3n - (6+5)$

$$-6 + 2n = 3n - 11$$

$$-6 = n - 11$$

$$n = 5$$

20. $4(x + 5) - 3 = 6x - 13$

$$4x + 20 - 3 = 6x - 13$$

$$4x + 17 = 6x - 13$$

$$17 = 2x - 13$$

$$30 = 2x$$

$$x = 15$$

21. $2(r - 4) = 5(r + -7)$

$$2r - 8 = 5r - 35$$

$$-8 = 3r - 35$$

$$27 = 3r$$

$$r = 9$$

22. $7 - 6a = 6 - 7a$

$$7 + a = 6$$

$$a = -1$$

23. $\frac{2}{3}b + 5 = 20 - b$

$$\frac{2}{3}b + \frac{3}{3}b + 5 = 20$$

$$\frac{5}{3}b + 5 = 20$$

$$3 \cdot \frac{5}{3}b = 15 \cdot 3$$

$$5b = 45$$

$$b = 9$$

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

$$-\frac{1}{2}x \quad -\frac{1}{2}x$$

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

$$\frac{4}{6}x - \frac{3}{6}x - \frac{1}{6} = \frac{5}{6}$$

$$\frac{1}{6}x = 1 \cdot 6$$

$$x = 6$$