Algebra 101 exam 1 Solutions

1   Linear equations

1. $e = \frac{-J-11}{-N+n}$

2. $V = \frac{1}{9}d - \frac{1}{9}z$

3. $f = \frac{R+9}{-R+17}$

4. $S = \frac{1}{3}k - \frac{20}{3}$

5. $h = \frac{1}{20}n - \frac{1}{20}r$

6. $C = \frac{K-v}{M+24}$

7. $r = -\frac{5}{7}$

8. $U = \frac{28}{15}$

9. $W = \frac{6}{-Y+10}$

10. $v = -\frac{1}{8}J + \frac{7}{4}$

11. $J = \frac{-k-20}{-Q+p}$

12. $p = \frac{30}{-R+z}$

13. $B = \frac{-x+12}{c-2}$

14. $a = \frac{R-h}{N-10}$

15. $g = \frac{K-d}{t+8}$

16. $A = \frac{11}{5}$

17. $d = -\frac{1}{14}L + \frac{8}{7}$

18. $w = \frac{1}{20}$

19. $m = \frac{44}{V+12}$

20. $Z = \frac{V-g}{d+20}$

2   Quadratic equations

1. $x = -\frac{2}{31}\sqrt{93}$, $x = \frac{2}{31}\sqrt{93}$

2. $x = 0$, $x = 1$

3. $x = -\frac{1}{2} - \frac{1}{6}\sqrt{15}\imath$, $x = -\frac{1}{2} + \frac{1}{6}\sqrt{15}\imath$

4. $x = \frac{13}{2} + \frac{3}{2}\sqrt{23}$, $x = -\frac{3}{2}\sqrt{23} + \frac{13}{2}$

5. $x = 0$, $x = \frac{13}{17}$

6. $x = \frac{7}{24} - \frac{1}{24}\sqrt{143}\imath$, $x = \frac{7}{24} + \frac{1}{24}\sqrt{143}\imath$

7. $x = 2 - \frac{1}{2}\sqrt{14}\imath$, $x = 2 + \frac{1}{2}\sqrt{14}\imath$

8. $x = \frac{17}{48} - \frac{1}{48}\sqrt{1247}\imath$, $x = \frac{17}{48} + \frac{1}{48}\sqrt{1247}\imath$

9. $x = \frac{7}{36} - \frac{1}{36}\sqrt{1031}\imath$, $x = \frac{7}{36} + \frac{1}{36}\sqrt{1031}\imath$

10. $x = 0$

11. $x = \frac{3}{2} + \frac{1}{6}\sqrt{123}$, $x = -\frac{1}{6}\sqrt{123} + \frac{3}{2}$

12. $x = -\frac{3}{5}$, $x = 0$

13. $x = -\frac{1}{8} - \frac{1}{8}\sqrt{47}\imath$, $x = -\frac{1}{8} + \frac{1}{8}\sqrt{47}\imath$

14. $x = \frac{17}{14} + \frac{1}{14}\sqrt{597}$, $x = -\frac{1}{14}\sqrt{597} + \frac{17}{14}$

15. $x = \frac{7}{52} - \frac{1}{52}\sqrt{2031}\imath,\ x = \frac{7}{52} + \frac{1}{52}\sqrt{2031}\imath$

16. $x = \frac{1}{3} - \frac{1}{6}\sqrt{134}\imath,\ x = \frac{1}{3} + \frac{1}{6}\sqrt{134}\imath$

17. $x = -\frac{6}{13} + \frac{1}{26}\sqrt{326},\ x = -\frac{1}{26}\sqrt{326} - \frac{6}{13}$

18. $x = -\frac{1}{3} - \frac{1}{3}\sqrt{2}\imath,\ x = -\frac{1}{3} + \frac{1}{3}\sqrt{2}\imath$

19. $x = -\frac{5}{7} - \frac{1}{7}\sqrt{73}\imath,\ x = -\frac{5}{7} + \frac{1}{7}\sqrt{73}\imath$

20. $x = -\frac{23}{48} + \frac{1}{48}\sqrt{1393},\ x = -\frac{1}{48}\sqrt{1393} - \frac{23}{48}$