Algebra 101 exam 1 Solutions

1 Linear equations

1. $W = \frac{D-k}{-D+v}$
2. $C = 0$
3. $r = \frac{-g+n}{A-1}$
4. $x = \frac{14}{P+22}$
5. $A = \frac{1}{5}z + \frac{12}{5}$
6. $R = \frac{H-N}{N-20}$
7. $M = 1$
8. $M = \frac{D+26}{-k-16}$
9. $Z = \frac{s-6}{e-23}$
10. $Q = \frac{1}{16}A - \frac{9}{8}$
11. $j = \frac{-R-24}{-M+k}$
12. $N = \frac{16}{-C+13}$
13. $j = \frac{34}{-G+M}$
14. $n = \frac{-M+z}{P-24}$
15. $g = \frac{c-j}{y+26}$
16. $S = \frac{V+18}{-E+22}$
17. $X = \frac{-N+P}{-U+n}$
18. $Y = \frac{-H+13}{C-6}$
19. $Z = \frac{-G+10}{y+12}$
20. $K = \frac{4}{B-3}$

2 Quadratic equations

1. $x = -\frac{1}{2}\sqrt{2}\imath$, $x = \frac{1}{2}\sqrt{2}\imath$
2. $x = -\frac{2}{17} - \frac{10}{17}\sqrt{2}\imath$, $x = -\frac{2}{17} + \frac{10}{17}\sqrt{2}\imath$
3. $x = -\frac{1}{17}\sqrt{85}$, $x = \frac{1}{17}\sqrt{85}$
4. $x = 0$, $x = \frac{7}{2}$
5. $x = -\frac{1}{11}\sqrt{187}$, $x = \frac{1}{11}\sqrt{187}$
6. $x = -\frac{9}{13} - \frac{1}{13}\sqrt{179}\imath$, $x = -\frac{9}{13} + \frac{1}{13}\sqrt{179}\imath$
7. $x = \frac{2}{11} + \frac{1}{22}\sqrt{302}$, $x = -\frac{1}{22}\sqrt{302} + \frac{2}{11}$
8. $x = -\frac{1}{26}\sqrt{273} + \frac{3}{2}$, $x = \frac{1}{26}\sqrt{273} + \frac{3}{2}$
9. $x = -7$, $x = 0$
10. $x = \frac{5}{34} + \frac{3}{34}\sqrt{33}$, $x = -\frac{3}{34}\sqrt{33} + \frac{5}{34}$
11. $x = -\frac{13}{4} + \frac{1}{4}\sqrt{209}$, $x = -\frac{1}{4}\sqrt{209} - \frac{13}{4}$
12. $x = -\frac{10}{19}$, $x = 0$
13. $x = -\frac{13}{6} + \frac{1}{6}\sqrt{265}$, $x = -\frac{1}{6}\sqrt{265} - \frac{13}{6}$

14. $x = 0$, $x = \frac{32}{35}$

15. $x = \frac{23}{8} + \frac{1}{8}\sqrt{881}$, $x = -\frac{1}{8}\sqrt{881} + \frac{23}{8}$

16. $x = 0$

17. $x = -\frac{1}{7}\sqrt{14}$, $x = \frac{1}{7}\sqrt{14}$

18. $x = \frac{1}{2} + \frac{1}{46}\sqrt{1541}$, $x = -\frac{1}{46}\sqrt{1541} + \frac{1}{2}$

19. $x = -\frac{19}{34} - \frac{3}{34}\sqrt{111}\imath$, $x = -\frac{19}{34} + \frac{3}{34}\sqrt{111}\imath$

20. $x = -\frac{1}{6}\sqrt{70} + \frac{5}{3}$, $x = \frac{1}{6}\sqrt{70} + \frac{5}{3}$