

ALGEBRAIC EQUATIONS 9, 10, 11
2014 KCATM

Name _____
Grade _____

1. Solve for x: $5x + 7 = x + 17$

- a) $\frac{3}{4}$ b) $\frac{4}{3}$ c) $\frac{7}{4}$ d) $\frac{5}{2}$ e) not given

2. Solve for x: $3(x - 9) = 8$

- a) $\frac{35}{3}$ b) 15 c) 1 d) $\frac{29}{3}$ e) not given

3. Solve for x: $-7[-2x - 5 + 3(x + 1)] = 3x - 5$

- a) 2 b) -5 c) 10 d) -25 e) not given

4. Solve for x: $\frac{x+2}{3} = \frac{x+4}{7}$

- a) $\frac{13}{2}$ b) $-\frac{1}{2}$ c) $-\frac{1}{5}$ d) $\frac{5}{2}$ e) not given

5. Solve for x: $1 - \frac{10}{7x} = \frac{8}{4}$

- a) 10 b) $-\frac{10}{7}$ c) $\frac{10}{7}$ d) $-\frac{40}{7}$ e) not given

6. Solve for x: $\frac{4}{5}x + 3 = \frac{2}{3}x + 5$

- a) 1 b) -1 c) 15 d) -15 e) not given

7. Solve for x: $6x - 3(2 - x) \geq 2x + 3$

- a) $\left[\frac{9}{7}, \infty\right)$ b) $\left(-\infty, \frac{9}{7}\right]$ c) $\left(-\infty, -\frac{1}{2}\right]$ d) $\left[-\frac{1}{2}, \infty\right)$ e) not given

8. Solve for x: $8 \leq 2 - 3x < 17$

- a) $[-5, -2)$ b) $(-5, -2]$ c) $[-5, 2)$ d) $(-5, 2]$ e) not given

9. Solve for x: $6x < 3x$

- a) never true b) always true c) $(-\infty, 0)$ d) $(0, \infty)$ f) not given

10. Solve for x: $|x - 8| = 12$

- a) 20 b) 4 and -20 c) -4 d) -4 and 20 e) not given

11. Solve for x: $|x + 8| + 3 = 8$

- a) 3, 13 b) 3, -13 c) -3, -13 d) -3, 13 e) not given

12. Solve for x: $|3x + 7| - 6 = -10$

- a) $-1, \frac{11}{3}$ b) $1, \frac{-11}{3}$ c) $\frac{-11}{3}$ d) no solution e) not given

13. Solve for x: $x^2 - x + 56 = 0$

- a) $7i, 8i$ b) 7, -8 c) -7, 8 d) -7, -8 e) not given

14. Solve for x: $-x^2 = 49$

- a) ± 7 b) $\pm 7i$ c) 7 d) -7 e) not given

15. Solve for x: $2x^2 = -18x - 36$

- a) 6, -3 b) -3, -6 c) 6, 3 d) -6, 12 e) not given

16. Solve for x: $(9x + 7)^2 = 11$

- a) $-7 \pm \sqrt{11}$ b) $\pm \frac{i\sqrt{3}}{9}$ c) $\frac{-7 \pm \sqrt{11}}{9}$ d) $\frac{-7 \pm i\sqrt{11}}{9}$ e) not given

17. Solve for x: $x^3 = -(5x^2 + 6x)$

- a) 2, 3 b) 0, 2, 3 c) -3, -2, 0 d) -3, 2 e) not given

18. Solve for x: $x^3 - 64 = 0$

- a) $4, -2 \pm 2i\sqrt{3}$ b) $4, 2 \pm 2\sqrt{5}$ c) $4, 2 \pm 2i\sqrt{6}$ d) $4, 2 \pm 2i$ e) not given

19. Solve for x: $-x^4 + 5x^2 = 4$

- a) $\pm 1, \pm 4$ b) $\pm 1, \pm 2$ c) 1, 4 d) 1, 2 e) not given

20. Solve for x: $\sqrt{3x+10} = 5 - 2x$

- a) $\frac{5}{4}, 9$ b) $\frac{3}{4}$ c) 5 d) $\frac{3}{4}, 5$ e) not given

21. Solve for x: $\sqrt{3x-2} + \sqrt{11+x} = -1$

- a) no solution b) $-\frac{5}{2}$ c) 5 d) 0 e) not given

22. Solve for x: $\frac{-5x^2-4}{x-4} = \frac{-15x}{x-4} + 4$

- a) $\frac{-4}{5}, 3$ b) $\frac{4}{5}, -3$ c) 3 d) $\frac{-5 \pm \sqrt{145}}{3}$ e) not given

23. Solve for x: $\frac{6}{x+5} = 1 - \frac{1}{x-5}$

- a) no solution b) 1, 5 c) 0, -5 d) 0, 7 e) not given

24. Solve for x: $\frac{x+1}{3} + \frac{x-1}{7} = \frac{2}{21}$

- a) 0 b) 5 c) $\frac{3}{5}$ d) $\frac{1}{5}$ e) not given

25. Solve for x: $42x^{-2} - x^{-1} = 56$

- a) $\frac{6}{7}, \frac{-7}{8}$ b) $\frac{7}{6}, \frac{8}{7}$ c) $\frac{7}{6}, \frac{-8}{7}$ d) $\frac{-7}{6}, \frac{-8}{7}$ e) not given

26. Simplify: $(7 - 2i)(3 + 8i)$

- a) $5 + 50i$ b) $5 - 50i$ c) $37 + 50i$ d) $37 - 50i$ e) not given

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ALGEBRA INDIVIDUAL TEST ANSWERS 9, 10, 11

1. D
2. A
3. E
4. B
5. B
6. C
7. A
8. B
9. C
10. D
11. C
12. D
13. E
14. B
15. B
16. C
17. C
18. A
19. B
20. D
21. A
22. A
23. D
24. E
25. A
26. C
27. B
28. E
29. A
30. D