

1. Simplify  $(\sqrt{7b} + \sqrt{13z})(\sqrt{7b} - \sqrt{13z})$ .

- a)  $13b - 7z$
- b)  $7b - 13z$
- c)  $13b + 7z$
- d)  $14\sqrt{b} + 26\sqrt{z}$
- e)  $7b + 13z$

2. Solve the quadratic equation  $2n^2 + 5n - 3 = 0$  by using the factoring method.

- a)  $\left\{3, \frac{1}{2}\right\}$
- b)  $\left\{-3, \frac{1}{2}\right\}$
- c)  $\left\{\frac{3}{2}, -1\right\}$
- d)  $\left\{-3, -\frac{1}{2}\right\}$
- e)  $\{-3, 1\}$

3. Solve  $6\sqrt{x} = x + 5$ .

- a)  $x = -1$  or  $x = 25$
- b)  $x = 1$
- c)  $x = 1$  or  $x = -25$
- d)  $x = 25$
- e)  $x = 1$  or  $x = 25$

4. Solve the equation  $\sqrt{-5x + 21} = x - 3$ .

- a)  $x = -3$
- b)  $x = 4$
- c)  $x = 3$
- d)  $x = 21$
- e)  $x = -4$

5. Rationalize the denominator and simplify  $\frac{\sqrt{y}}{\sqrt{y} - 2}$ .

- a)  $\sqrt{y}$
- b)  $\frac{2\sqrt{y}}{y - 4}$
- c)  $\frac{3y}{y - 4}$
- d)  $\frac{y + 2\sqrt{y}}{y - 2}$
- e)  $\frac{y + 2\sqrt{y}}{y - 4}$

6. Write  $\frac{-4 + 14i}{-1 + i}$  in standard form.

- a)  $-9 + 5i$
- b)  $18 + 10i$
- c)  $9i - 5$
- d)  $18 - 10i$
- e)  $9 - 5i$

7. Solve the inequality  $(x + 3)^2 \geq 0$ .

- a)  $(-\infty, 3)$
- b)  $(-\infty, \infty)$
- c)  $(-3, \infty)$
- d)  $(0, 2)$
- e)  $(-2, 0)$

8. Solve  $(x - 4)^2 = 12$ .

- a)  $\{4 \pm 3\sqrt{5}\}$
- b)  $\{-4 \pm 2\sqrt{5}\}$
- c)  $\{4 \pm 2\sqrt{3}\}$
- d)  $\{-4 \pm 2\sqrt{3}\}$
- e)  $\{4 \pm 3\sqrt{3}\}$

9. Write  $13x^{\frac{13}{11}}$  in radical form.

- a)  $\sqrt{x^{11}}$
- b)  $13 \sqrt[13]{x^{11}}$
- c)  $13 \sqrt[11]{x^{13}}$
- d)  $\frac{1}{13 \sqrt[11]{x^{13}}}$
- e)  $\sqrt[11]{13x^{13}}$

10. Write  $(-5i)(-9 - 3i)$  in standard form.

- a)  $15i - 45$
- b)  $-15i - 45$
- c)  $45i - 15$
- d)  $-45i + 15i$
- e)  $45i + 15i$

11. Two positive integers differ by 3 and their product is 10. Find the sum of these two numbers.

- a) 7
- b) 8
- c) 10
- d) 12
- e) 30

12. Simplify  $\frac{20b^{\frac{1}{6}}}{5b^{\frac{9}{8}}}$ .

- a)  $\frac{4}{b^{\frac{9}{8}}}$
- b)  $\frac{4}{b}$
- c)  $\frac{b}{4}$
- d)  $\frac{4}{b^{-1}}$
- e)  $\left(\frac{4}{b}\right)^{\frac{9}{8}}$

13. Solve  $4(x + 1)^2 - 3 = 141$ .

- a)  $\{0, 12\}$
- b)  $\{-7, 5\}$
- c)  $\{-6, 1\}$
- d)  $\{-10, 10\}$
- e)  $\{0\}$

14. Solve the inequality  $(x - 2)(2x - 7) \leq 0$ .

- a)  $(-\infty, -2) \cup (2, \infty)$
- b)  $(-\infty, 2) \cup (7, \infty)$
- c)  $\left[2, \frac{7}{2}\right]$
- d)  $(-\infty, -2] \cup [2, \infty)$
- e)  $(-\infty, 2) \cup \left(\frac{7}{2}, \infty\right)$

15. Solve  $100k^2 - 180k + 81 = 0$ .

- a)  $k = \pm \frac{10}{9}$
- b)  $k = \frac{9}{10}$
- c)  $k = \frac{10}{9}$
- d)  $k = 0, k = \frac{9}{10}$
- e)  $k = \pm \frac{9}{10}$

16. Solve the equation  $\frac{36}{x-3} + \frac{12}{x} = 14$ .

- a)  $\left\{\frac{3}{7}, 6\right\}$
- b)  $\left\{\frac{1}{7}, 4\right\}$
- c)  $\left\{\frac{1}{10}, 6\right\}$
- d)  $\left\{\frac{3}{10}, 4\right\}$
- e)  $\left\{\frac{1}{7}, 6\right\}$

17. Solve the inequality  $\frac{9x-4}{x} \geq 0$ .

- a)  $(-\infty, 0) \cup \left[\frac{4}{9}, \infty\right)$
- b)  $(-\infty, -9] \cup [4, \infty)$
- c)  $(-\infty, -9) \cup (4, \infty)$
- d)  $(-\infty, 4) \cup (9, \infty)$
- e)  $(-\infty, 4] \cup [9, \infty)$

18. Find the sum of the roots of  $x(45x + 41) = 10$ .

- a)  $-\frac{41}{45}$
- b)  $\frac{41}{45}$
- c)  $-\frac{10}{41}$
- d)  $\frac{10}{41}$
- e)  $-5$

19. Solve  $\sqrt{-4x + 13} = x - 2$ .

- a)  $\{2\}$
- b)  $\{-2\}$
- c)  $\{-3\}$
- d)  $\{3\}$
- e)  $\emptyset$

20. Solve  $\sqrt{3x + 18} = \sqrt{9x - 3}$ .

- a)  $\left\{\frac{7}{2}\right\}$
- b)  $\left\{\frac{2}{7}\right\}$
- c)  $\{18\}$
- d)  $\{3\}$
- e)  $\left\{\frac{9}{2}\right\}$

ITEM NO.	FORM:	A
1		B
2		B
3		E
4		B
5		E
6		E
7		B
8		C
9		C
10		C
11		A
12		B
13		B
14		C
15		B
16		A
17		A
18		A
19		D
20		A