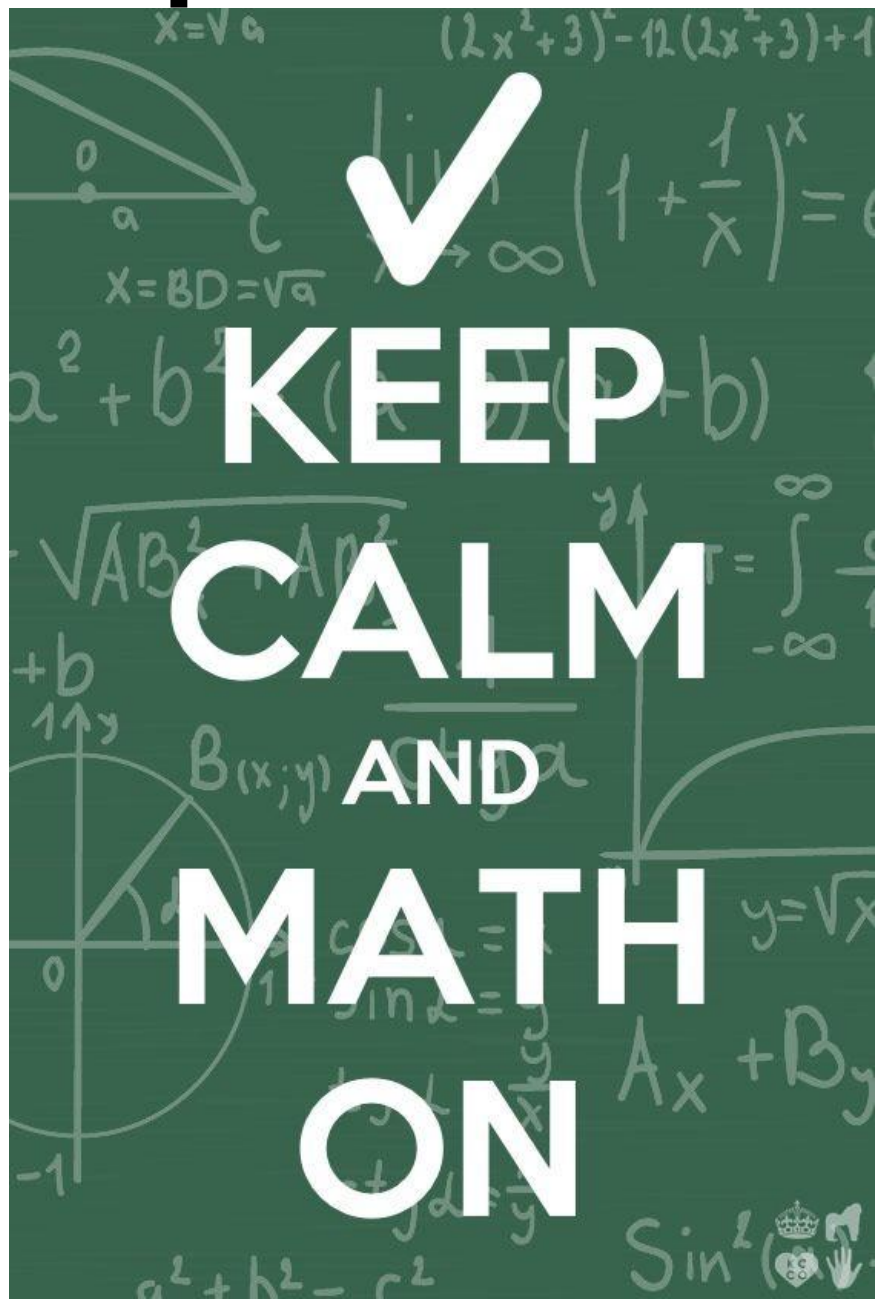


Chapter 1 Test



Solve.

1. $5x + 18 = -17$

- A. -5
- B. -5
- C. $\frac{1}{5}$
- D. $-\frac{1}{5}$

2. $9 + 4(2x + 1) = 6(2 - 3x)$

- A. $\frac{25}{26}$
- B. $\frac{8}{5}$
- C. $-\frac{1}{26}$
- D. $\frac{1}{5}$

3. $\frac{3}{4}x + \frac{1}{8} = \frac{3}{8}x - \frac{1}{2}$

- A. $-\frac{1}{3}$
- B. $\frac{5}{9}$
- C. $-\frac{1}{6}$
- D. $\frac{5}{3}$

4. $|7x + 7| = 35$

- A. $-4, -6$
- B. $-4, 6$
- C. $4, -6$
- D. \emptyset

Solve the quadratic equation by factoring.

5. $x^2 + 2x = 48$

- A. $8, -6$
- B. $-8, 6$
- C. $8, 6$
- D. *prime*

6. $2x^2 - 5x - 12 = 0$

- A. $-\frac{3}{2}, -4$
- B. $-\frac{3}{2}, 4$
- C. $\frac{3}{2}, -4$
- D. *prime*

Solve the quadratic equation by square roots.

7. $7x^2 - 84 = 0$

- A. ± 14
- B. $\pm 3\sqrt{2}$
- C. $\pm 2\sqrt{6}$
- D. $\pm 2\sqrt{3}$

8. $(x - 4)^2 + 40 = 0$

- A. $4 \pm 2i\sqrt{10}$
- B. $4 \pm 4i\sqrt{10}$
- C. $4 \pm 4i\sqrt{5}$
- D. $4 \pm 5i\sqrt{8}$

Solve the quadratic equation by using the quadratic formula.

9. $5x^2 - 14 = -3x$

A. $\frac{3 \pm \sqrt{271}}{5}$

B. $\frac{3 \pm \sqrt{17}}{5}$

C. $-2, \frac{7}{5}$

D. $\frac{3}{5}, -\frac{8}{5}$

10. $7x^2 - 6x + 5 = 0$

A. $\frac{3 \pm 2i\sqrt{26}}{7}$

B. $\frac{6 \pm 26\sqrt{2}}{14}$

C. $\frac{3 \pm i\sqrt{26}}{7}$

D. $\frac{6 \pm \sqrt{176}}{14}$

Solve the equation.

11. $3x^3 - 75x - x^2 + 25 = 0$

A. $\pm 5, -\frac{1}{3}$

B. $\pm 5, \frac{1}{3}$

C. $\pm 5i, \frac{1}{3}$

D. $\pm 5i, -\frac{1}{3}$

12. $x^3 - 49x = 0$

A. $\pm 7, 0$

B. $\pm 7i$

C. ± 7

D. 0

13. $x^4 - 16 = 0$

A. $\pm 2, \pm \sqrt{-2}$

B. $\pm 2, \pm 2i$

C. ± 2

D. $\pm 2, \pm 4i$

14. $3x^{\frac{2}{3}} - 10x^{\frac{1}{3}} = 8$

A. $64, -\frac{2}{3}$

B. $64, -\frac{8}{27}$

C. $12, -\frac{2}{3}$

D. $12, -\frac{8}{27}$

15. $\sqrt{x+3} = \sqrt{6-x}$

A. $\frac{\sqrt{3}}{2}$

B. $\frac{3}{2}$

C. $\pm \sqrt{3}$

D. \emptyset

16. $\frac{2}{x+4} + \frac{2}{3} = \frac{3}{x+4}$

A. $-\frac{11}{2}$

B. $-\frac{17}{2}$

C. $-\frac{23}{2}$

D. $-\frac{5}{2}$

Solve each inequality. Write your answer in interval notation.

17. $3x + 9 \geq 21$ or $4x + 2 < -18$

- A. $(-\infty, 5) \cup [4, \infty)$
- B. $(-\infty, -5) \cup [4, \infty)$
- C. $(-\infty, -5) \cup [-4, \infty)$
- D. $(-\infty, 5) \cup [-4, \infty)$

18. $5x - 11 < 19$ and $-2x - 3 \leq 13$

- A. $[-8, 6)$
- B. $[8, -6)$
- C. $(-\infty, -8) \cap [6, \infty)$
- D. $(-\infty, -8) \cap [9, \infty)$

19. $|6x - 5| > 19$

- A. $(-\infty, -\frac{7}{3}) \cup (4, \infty)$
- B. $(-\infty, \frac{7}{3}) \cup (-4, \infty)$
- C. $(-\infty, -\frac{7}{3}) \cup (-4, \infty)$
- D. $(-\infty, \frac{7}{3}) \cup (4, \infty)$

20. $|5x + 15| \leq 25$

- A. $[8, 2]$
- B. $[-8, -2]$
- C. $[-8, 2]$
- D. $[8, -2]$

Use the critical value method to solve each inequality. Write your answer in interval notation.

21. $x^2 - 12x + 32 < 0$

- A. $[4, 8]$
- B. $(-4, -8)$
- C. $[-4, -8]$
- D. $(4, 8)$

22. $3x^3 - 2x^2 - 27x + 18 \geq 0$

- A. $[-3, 3] \cup [-\frac{2}{3}, \infty)$
- B. $[-3, -\frac{2}{3}] \cup [3, \infty)$
- C. $[-3, 3] \cup [\frac{2}{3}, \infty)$
- D. $[-3, \frac{2}{3}] \cup [3, \infty)$

23. $\frac{x+4}{x-2} \geq 0$

- A. $(-\infty, 4] \cap [-2, \infty)$
- B. $(-\infty, -4] \cap [2, \infty)$
- C. $(-\infty, -4] \cup [-2, \infty)$
- D. $(-\infty, 4] \cup [2, \infty)$

24. $\frac{4x-2}{x+3} < 3$

- A. $(3, -11)$
- B. $(-7, -3)$
- C. $(-3, 11)$
- D. $(7, -3)$