

Algebra I Readiness Test

Circle the letter that corresponds to the correct answer

Arithmetic

1. Which of the following is a number between 5.6 and 5.7?

- a. 5.8
- b. 5.5
- c. 5.64
- d. 5.0

2. $1.6 \times 0.2 =$

- a. 0.32
- b. 3.2
- c. 3.20
- d. 320

3. $98.453 - 3.21 =$

- a. 98.132
- b. 981.32
- c. 95.243
- d. 66.353

4. $20 + .423 + 1.33 =$

- a. 76.5
- b. 21.753
- c. 58.5
- d. 76.5

5. $79.2/0.5 =$

- a. 1.584
- b. 15.84
- c. 158.4
- d. 1584.0

6. $-2(4 - 7) =$

- a. $-8 + 14$
- b. $-8 - 14$
- c. $8 - 14$
- d. $-8 - 14$

7. $14 - 5 + (-6) - 23 =$

- a. -20
- b. 147
- c. 31
- d. -129

8. $\frac{125}{-25} =$

a. 5

b. 100

c. -5

d. -100

9. $-44 \times (-2) =$

a. -88

b. 88

c. -22

d. 22

10. $30 - 3 \div 3 =$

a. 9

b. 29

c. $1/3$

d. -29

11. $\frac{15}{7} \times \frac{4}{5} \times \frac{7}{2} =$

a. 6

b. 4

c. $1/6$

d. $7/42$

12. $3 \frac{1}{2} =$

a. $4/2$

b. $7/2$

c. $7/4$

d. $3/2$

13. $-2 \frac{2}{3} \times 4 \frac{1}{10} =$

a. $8 \frac{3}{13}$

b. $-8 \frac{3}{13}$

c. $10 \frac{14}{15}$

d. $-10 \frac{14}{15}$

14. $\frac{1}{2} \div \frac{5}{4}$

a. $\frac{5}{2}$

b. $\frac{5}{8}$

c. 2

d. $\frac{2}{5}$

15. $\frac{9}{5} \div 2$

a. $\frac{9}{10}$

b. $\frac{18}{5}$

c. $\frac{11}{5}$

d. 4

16. Write 65% as a decimal

a. 65

b. 0.65

c. 6.5

d. 0.065

17. Write 445% as a decimal

a. 4.45

b. 44.5

c. 445

d. 0.445

18. Write 0.452 as a percent

a. 0.452%

b. 452%

c. 4.52%

d. 45.2%

19. Write 80% as a fraction

a. $\frac{4}{5}$

b. $\frac{8}{100}$

c. $\frac{8}{1}$

d. $\frac{1}{8}$

20. Write $\frac{3}{8}$ as a percent.

a. 38%

b. 37.5%

c. 375%

d. 380%

Number Theory

21. List all positive factors of 16.

1, 2, 4, 8, 16

22. Write the prime factorization of 40.

$2 \times 2 \times 2 \times 5$ or $2^3 \times 5$

23. Find the Greatest Common Factor of 24 and 28

- a. 24
- b. 28
- c. 4
- d. 20

24. Find the Greatest Common Factor of $30y^3$ and $20y^2$

- a. $20y^3$
- b. $5y$
- c. $5y^2$
- d. $10y^2$

25. What is the Least Common Multiple of 14 and 6?

- a. 84
- b. 42
- c. 21
- d. 6

26. Write the prime factorization of $18xy$.

$2 \cdot 3 \cdot 3 \cdot x \cdot y$ or $2 \cdot 3^2 \cdot x \cdot y$

27. Write the prime factorization of $78a^3$.

$2 \cdot 3 \cdot 13 \cdot a \cdot a \cdot a$ or $2 \cdot 3 \cdot 13 \cdot a^3$

28. $(8)^2 - (3)^2 =$

- a. 16
- b. 10
- c. 55
- d. 5^2

29. 4^3 has the same value as

- a. $4 \times 4 \times 4$
- b. 4×3
- c. $4 + 3$
- d. 1

30. $5^8 \times 5^{-2} =$

a. 5^{10}

b. 5^6

c. 6^5

d. 5^{-16}

Algebraic Expressions

31. $-(-2 - n) =$

a. $-2 - n$

b. $2 - n$

c. $2 + n$

d. $-2 + n$

32. $(3 - 7k) \cdot (-2) =$

a. $-6 - 14k$

b. $-6 + 14k$

c. $-5 - 9k$

d. $-5 + 9k$

33. $7p - 10p =$

a. $3p$

b. $-3p$

c. $17p$

d. $-17p$

34. $-4p - (1 - 6p)$

a. $2p - 1$

b. $-10p - 1$

c. $-11p$

d. $-2p$

35. Evaluate $8(x - y)$ for $x = 5$ and $y = 2$

24

36. Evaluate $b(a + b)$ for $a = 9$ and $b = 4$

61

Equations

37. If $\frac{m}{16} = -2$; $m =$

a. 14

b. -48

c. -32

d. $-\frac{1}{8}$

38. If $-10 = x - 21$; $x =$

a. 11

b. -31

c. -11

d. 31

39. If $\frac{5}{n} = 30$; $n =$

a. 6

b. $\frac{1}{6}$

c. 150

d. -150

40. $3^n = 1$ if $n =$

a. 0

b. 1

c. -1

d. there is no value of n that will make $3^n = 1$

41. $3^n = 0$ if $n =$

a. 0

b. 1

c. -1

d. there is no value of n that will make $3^n = 0$

42. If $3p - 2 = -29$, $p =$

a. 9

b. -9

c. $-\frac{31}{3}$

d. $\frac{31}{3}$

43. If $|x| = 5$; $x =$
- a. -5 b. 5
c. -5 or 5 d. neither -5 or 5
44. If $\sqrt{x} = 9$; $x =$
- a. 3 b. 81
c. 9 d. 27
45. The product of a number n and 7 is 56. Which of the following equations represents this statement?
- a. $n + 7 = 56$ b. $\frac{n}{7} = 56$
c. $7n = 56$ d. $n = 7 \times 56$
46. How old am I if 2 times my age is 28?
- a. 56 b. 30
c. 14 d. 26

Inequalities

47. If $n - 2 \geq -20$, then
- a. $n \geq -22$ b. $n \leq -22$
c. $n \geq -18$ d. $n \leq -18$
48. If $-4r \geq 16$, then
- a. $r \geq -4$ b. $r \geq 4$
c. $r \leq -4$ d. $r \leq 4$
49. If $x - 2 \geq 5$; then
- a. x can be 7 or more b. $x = 8$
c. $x = 7$ d. $x = 5$

Properties

50. $x + y = y + x$

a. True

b. False

51. $(x + y) + z = x + (y + z)$

a. True

b. False

52. $x(y + z) = xy + xz$

a. True

b. False

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Answer Key

1. C
2. A
3. C
4. B
5. C
6. A
7. A
8. C
9. B
10. B
11. A
12. B
13. D
14. D
15. A
16. B
17. A
18. D
19. A
20. B
21. 1, 2, 4, 8, 16
22. $2 \times 2 \times 2 \times 5$ or $2^3 \times 5$
23. C
24. D
25. B
26. $2 \cdot 3 \cdot 3 \cdot x \cdot y$ or $2 \cdot 3^2 \cdot x \cdot y$
27. $2 \cdot 3 \cdot 13 \cdot a \cdot a \cdot a$ or $2 \cdot 3 \cdot 13 \cdot a^3$
28. C
29. A
30. B
31. C
32. B
33. B
34. A
35. 24
36. 61
37. C
38. A
39. B
40. A
41. D
42. B
43. C
44. B
45. C
46. C
47. C
48. C

49. A

50. A

51. A

52. A