

CYU Test Review #2

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Symbols & Sets of Numbers	1 - 5	6 - 7	8
Fractions & Mixed Numbers	9 - 14	15	16
Exponents, Order of Operations, Variable Expressions, & Equations	17 - 18	19 - 20	22 - 27
Adding Real Numbers	28 - 31	32, 34	33
Subtracting Real Numbers	35, 36	37	38
Multiplying & Dividing Real Numbers	37, 40	41 - 44	45 - 48
Properties of Real Numbers	55	56, 57	49 - 54

1.2 Insert $<$, $>$, or $=$ in the appropriate space to make the following statements true.

1. $8 < 10$
2. $-4 > -5$
3. $|-7| < |-8|$
4. $-|-1| = -1$
5. $1.2 > 1.02$

Translate each statement into symbols.

6. Four is greater than or equal to negative three. $4 \geq -3$
7. 0.03 is less than 0.3. $0.03 < 0.3$

Given the following sets of numbers, list the numbers in each set that also belong to the set of:

- a. Natural numbers
 - b. Whole numbers
 - c. Integers
 - d. Rational numbers
 - e. Irrational numbers
 - f. Real numbers
8. $\{-3, -1.6, 2, 5, \frac{11}{2}, 15.1, \sqrt{5}, 2\pi\}$

a) $\{2, 5\}$ c) $\{-3, 2, 5\}$ e) $\{\sqrt{5}, 2\pi\}$
 b) $\{2, 5\}$ d) $\{-3, -1.6, 2, 5, \frac{11}{2}, 15.1\}$ f) $\{-3, -1.6, 2, 5, \frac{11}{2}, 15.1, \sqrt{5}, 2\pi\}$

1.3 Perform the indicated operations. Write results in lowest terms.

9. $\frac{8}{15} \cdot \frac{27}{30} = \frac{12}{25}$

10. $\frac{7}{15} + \frac{5}{6} = \frac{13}{10}$

11. $2\frac{3}{4} - 6\frac{5}{8} = \frac{75}{8}$

12. $5 \div \frac{1}{3} = 15$

Write the number as a product of prime factors.

13. 36
 $2 \cdot 2 \cdot 3 \cdot 3$

14. 120
 $2 \cdot 2 \cdot 2 \cdot 3 \cdot 5$

15. Every fraction is part of a whole. Figure out what is missing to make a whole or 1.

$\frac{1}{2} + \frac{1}{5} + ? = 1$
 $\frac{3}{10}$

16. If you have a rectangle with a length of $1\frac{1}{3}$ meters and width of $\frac{7}{8}$ meters.

a. Find the perimeter of the rectangle.

$\frac{53}{12} \text{ m}$

b. Find the area of the rectangle.

$\frac{7}{6} \text{ m}^2$

1.4 Choose the correct answer for each statement.

17. The expression $6 \cdot 3^2 + 2 \cdot 8$ simplifies to

a. -52

b. 448

c. 70

d. 64

18. The expression $68 - 5 \cdot 2^3$ simplifies to

a. -232

b. 28

c. 38

d. 504

Simplify each expression.

19. $\left(\frac{2}{7}\right)^2 = \frac{4}{49}$

20. $3(1 + 2 \cdot 5) + 4 = 37$

21. $\frac{4 + |6 - 2| + 8^2}{4 + 6 \cdot 4} = \frac{18}{7}$

Translate each word statement into symbols.

22. The difference of twenty and twelve is equal to the product of two and four.

$20 - 12 = 2 \cdot 4$

23. The quotient of nine and two is greater than negative five.

$\frac{9}{2} > -5$

Evaluate each expression if $x = 6$, $y = 2$, and $z = 8$.

24. $2x + 3y$

18

25. $\frac{x}{y} + \frac{z}{2y}$

5

Decide whether the given number is a solution of the given equation.

26. Is $x = 3$ a solution of $7x - 3 = 18$?

yes

27. Is $x = 1$ a solution of $3x^2 + 4 = x - 1$?

no

1.5 Find the additive inverse of the opposite.

28. -9

9

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

$-\frac{2}{3}$

30. $|-2|$

-2

31. $-|-7|$

7

Find the following sums.

32. $-15 + 4$

-11

33. $\frac{1}{16} + \left(-\frac{1}{4}\right)$

$-\frac{3}{16}$

34. $-4.6 + (-9.3)$

-13.9

1.6 Perform the indicated operations.

35. $6 - 20$

-14

36. $-6 - (-11)$

5

37. $-21 - 16 + 3(8 - 2)$

-19

Evaluate each expression for $x = 3$, $y = -6$, and $z = -9$.

38. $2x^2 - y + z$

15

1.7 Find the multiplicative inverse or reciprocal.

39. -6

$-\frac{1}{6}$

40. $\frac{3}{5}$

$\frac{5}{3}$

Simplify each expression.

41. $6(-8)$

-48

42. $\frac{-18}{-6}$

3

44. $\frac{-6}{0}$

undefined

43. $\frac{4(-3)+(-8)}{2+(-2)}$

undefined

45. $-4^2 - (-3 + 5) \div (-1) \cdot 2$

-12

46. If $x = -5$ and $y = -2$, evaluate each expression for $x^2 - y^4$.

9

Translate each phrase into an expression. Use x to represent a number.

47. The product of -7 and a number.

$$-7x$$

48. Subtract a number from -20 .

$$-20 - x$$

1.8 Name the property illustrated.

49. $-6 + 5 = 5 + (-6)$

Commutative POA

50. $3(8 - 5) = 3 \cdot 8 - 3 \cdot (5)$

distributive property

51. $2 + (3 + 9) = (2 + 3) + 9$

associative POA

52. $6(8 + 5) = 6 \cdot 8 + 6 \cdot 5$

distributive property

53. $4 \cdot \frac{1}{4} = 1$

multiplicative inverse property

54. $8 + 0 = 8$

Addition Identity

Use the distributive property to write each expression without parentheses.

55. $5(y - 2)$

$$5y - 10$$

56. $-(7 - x + 4z)$

$$-7 + x - 4z$$

57. $-4(3x + 5) - 7$

$$-12x - 27$$

CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

