

BASIC ALGEBRA EXAM 1C*

NAME _____

SHOW ALL WORK ON THIS TEST OR ON SEPARATE PAPER! Circle Answers.

PART 1: (2 points each) Circle your answers!

In 1 - 12, give the value.

1. $12 \div 3 \cdot 2$

2. $2^2 + 3^2$

3. $5 - 5 \cdot 0$

4. $4 + 6 \cdot 8 + 2$

5. $(-18) + 12$

6. $(-18) + (-12)$

7. $(-18) \div 0$

8. $(-18) - (-24)$

9. $(-2)^4$

10. -2^4

11. $(-1)^{11}$

12. $0 \div 4$

In 13 - 18, combine like terms. Use the distributive property as necessary.

13. $2x + 2x$

14. $4 + 2(3x - 6)$

15. $5(x - 4) + 6(x + 5)$

16. $5(x - 4) - 6(x + 5)$

17. $4(3x + 2) - 7(x - 5)$

18. $-4(3x + 2) - 7(x - 6)$

In 19 - 21, given $x = -3$ and $y = 4$. Find the values of the expressions.

19. $x^2 + y^2$

20. $x^2 - y^2$

21. $4x + xy - 9y$

In 22 - 25, give the complete name of the property used:

22. $(x + 4) + 6 = x + (4 + 6)$

23. $(x \cdot 1/x) \cdot 3 = 1 \cdot 3$

24. $6 \cdot (x + 4) = 6 \cdot x + 6 \cdot 4$

25. $6 \cdot (x + 4) = 6 \cdot (4 + x)$

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PART 2: (4 points each, partial credit)**In 26 – 30, solve the equations.**

26. $4x + 12 = -8$

27. $-4x - 12 = 2x + 30$

28. $8x - 3(4 + 2x) = -6$

29. $-2(2y - 4) - 3(3y + 2) = -24$

30. $9 - 2(3t + 1) + t = 3 - 4(t - 1) - 2t - 6$

In 31 - 33, solve and graph on a number line.

31a) $x \geq -2$

b) $-4 < x < 6$

32. $2x - 4 \leq 2$

33. $-4x < 8$

34. $-2 < \frac{4x + 2}{3} \leq 2$

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In 35 - 38, give equations and solve the word problems.

35. Seven more than three times a number is equal to 64. Find the number.
36. Find three consecutive even numbers such that the first plus twice the second is 12 more than the third.
37. The length of a rectangle is 5 less than twice the width. The perimeter is 80. Find the dimensions of the rectangle.
38. Some dimes and quarters together are worth \$7.30. There are three more dimes than quarters. How many of each coin are there?

BASIC ALGEBRA EXAM 1 Form C * Solutions

1. $12 \div 3 \times 2 = 4 \times 2 = 8$
 2. $2^2 + 3^2 = 4 + 9 = 13$
 3. $5 - 5 \cdot 0 = 5 - 0 = 5$
 4. $4 + 6 \cdot 8 + 2 = 4 + 48 + 2 = 54$

5. $(-18) + 12 = -6$
 6. $(-18) + (-12) = -30$
 7. $(-18) \div 0 = \text{Undefined}$
 8. $-18 - (-24) = -18 + 24 = 6$

9. $(-2)^4 = (-2)(-2)(-2)(-2) = 16$
 10. $-2^4 = -2 \cdot 2 \cdot 2 \cdot 2 = -16$
 11. $(-1)^{11} = -1$
 12. $0 \div 4 = 0$
 13. $2x + 2x = 4x$

14. $4 + 2(3x - 6) = 4 + 6x - 12 = 6x - 8$
 15. $5(x - 4) + 6(x + 5) = 5x - 20 + 6x + 30 = 11x + 10$
 16. $5(x - 4) - 6(x + 5) = 5x - 20 - 6x - 30 = -x - 50$

17. $4(3x + 2) - 7(x - 5) = 12x + 8 - 7x + 35 = 5x + 43$
 18. $-4(3x + 2) - 7(x - 6) = -12x - 8 - 7x + 42 = -19x + 34$
 19. $x^2 + y^2 = (-3)^2 + 4^2 = 9 + 16 = 25$
 20. $x^2 - y^2 = (-3)^2 - (4)^2 = 9 - 16 = -7$

21. $4x + xy - 9y = 4(-3) + (-3)(4) - 9(4) = -12 - 12 - 36 = -60$

22. Assoc. for +.

26. $4x + 12 = -8$
 $\frac{-12}{-12} \quad \frac{-12}{-12}$
 $4x = -20$
 $x = -5$

27. $-4x - 12 = 2x + 30$
 $\frac{-2x}{-2x} \quad \frac{-12}{-2x}$
 $-6x - 12 = 30$
 $\frac{+12}{+12} \quad \frac{+12}{+12}$
 $-6x = 42$
 $x = -7$

23. Inverse for x.

24. Distributive

25. Commut. for +.

28. $8x - 3(4 + 2x) = -6$
 $8x - 12 - 6x = -6$
 $2x - 12 = -6$
 $\frac{+12}{+12} \quad \frac{+12}{+12}$
 $2x = 6$
 $x = 3$

29. $-2(2y - 4) - 3(3y + 2) = -24$
 $-4y + 8 - 9y - 6 = -24$
 $-13y + 2 = -24$
 $-13y = -26$
 $y = 2$

30. $9 - 2(3t + 1) + t = 3 - 4(t - 1)$
 $9 - 6t - 2 + t = 3 - 4t + 4 - 2t - 6$
 $-5t + 7 = -6t + 1$
 $\frac{+6t}{+6t} \quad \frac{+6t}{+6t}$
 $t + 7 = 1$
 $t = -6$

31a) $x \geq -2$

32. $2x - 4 \leq 2$
 $2x \leq 6$
 $x \leq 3$

33. $-4x < 8$
 $\frac{-4}{-4} \quad \frac{-4}{-4}$
 $x > -2$

b) $-4 < x < 6$

35. Let x = the no.
 $3x + 7 = 64$
 $3x = 57$
 $x = 19$

37. Let x = width.
 $2x - 5 = \text{length}$
 $2(x) + 2(2x - 5) = 80$
 $2x + 4x - 10 = 80$
 $6x = 90$
 $x = 15 \text{ W}$

38. No Coins EA VALUES

Q	x	25	25x
D	x+3	10	10(x+3)
			730

$25x + 10x + 30 = 730$
 $35x = 700$
 $x = 20 \text{ Q}$
 $x + 3 = 23 \text{ D}$

34. $(-2) \cdot (x + 2) \leq 2$
 $-6 < 4x + 2 \leq 6$
 $\frac{-2}{-2} \quad \frac{-2}{-2}$
 $-8 < 4x \leq 4$
 $\frac{4}{4} \quad \frac{4}{4}$
 $-2 < x \leq 1$

$\frac{5.00}{2.30} = 7.30$

36. $x, x+2, x+4$
 $x + 2(x+2) = x+4 + 12$
 $3x + 4 = x + 16$
 $2x = 12$
 $x = 6$
 $x + 2 = 8$
 $x + 4 = 10$

$2x - 5 = 25 \text{ L}$