

Read each question carefully. **Give exact answers.** You must show all work in order to receive full credit. **Circle your final answers for 11-20.**

Part I (2 points each)

Match the expression on the left with the property on the right. Write legibly; if I can't tell what letter you wrote, it will be marked wrong.

- | | |
|---|-------------------------------------|
| ___ 1. 0 | a. commutative property of addition |
| ___ 2. $a + (b + c) = (a + b) + c$ | b. multiplicative inverse |
| ___ 3. <i>if $a = b$ and $b = c$, then $a = c$</i> | c. symmetric property of equality |
| ___ 4. $-a$ | d. distributive property |
| ___ 5. $a + b = b + a$ | e. additive inverse |
| ___ 6. 1 | f. multiplicative identity |
| ___ 7. <i>if $AB = 0$, then $A = 0$ or $B = 0$</i> | g. associative property of addition |
| ___ 8. <i>if $a = b$, then $b = a$</i> | h. additive identity |
| ___ 9. $a(b + c) = ab + ac$ | i. transitive property of equality |
| ___ 10. $1/a$ | j. zero product property |

Part II (8 points each)

11. Write without absolute value: $|x - 1| + |x + 2| - |x - 3|$, $1 < x < 2$

12. Find the distance between $-\frac{4}{3}$ and $\frac{5}{2}$.

13. Simplify the radical: $-\sqrt[4]{32x^5y^8z^3}$

14. Simplify the exponential expression: $\left(\frac{4x^{-3}y^5z^0}{3x^{1/2}y^{-1}}\right)^{-2}$

15. Factor completely: $2(x^3 - 4)^2 - 32$

16. Find the additive and multiplicative inverses of $-\frac{x}{2}$, where $x \neq 0$.

a. additive:

b. multiplicative:

17. For the polynomial $4x^2 - 3 - 5x + 2x^3$, identify the

a. degree

b. lead term

c. leading coefficient

d. constant term

18. Evaluate the polynomial in number 17 for $x = -1$.

19. Convert between interval and inequality notation.

a. $x \leq -2$ or $x > 5$ to interval notation

b. $(-1, 4]$ to an inequality

20. Simplify the complex fraction, and state the x-values which are not in the domain:

$$\frac{\left(\frac{2x^2-5x-3}{2x^2-9x-5}\right)}{\left(\frac{x}{x-6} - \frac{2}{x-5}\right)}$$