

Name: _____

Date: _____

Instructions: Please complete the following problems. Each answer is associated with a letter that creates a secret phrase. You can find the key on the last page.

Problem 1. Given the sets $A = \{2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $B = \{1, 3, 5, 7, 11\}$, and $C = \{5, 6\}$, find $(A \cap B) \cup C$

Problem 2. Express the interval $(| - 3|, 8]$ in terms of inequalities

Problem 3. For $x = 7$, solve the following expression using proper order of operations
$$\left(\frac{x^2 + x + 10}{11}\right) \cdot 3 - x$$

Problem 4. Find and simplify the product of the expression $7(5x + 9)$

Problem 5. Simplify the expression $(x^2 \cdot y)^3$

Problem 6. Simplify the expression $\frac{x^3 x^4}{x^2}$

Problem 7. Simplify the expression $\left(\frac{x^2 y^{-3}}{x^{-4} y^2}\right)^{-2}$ and eliminate any negative exponents.

Problem 8. Find the intersection of $I_1 = (-2, 3]$ and $I_2 = [1, 5)$

Problem 9. Evaluate: $|5 - | - 8||$

Problem 10. Evaluate: -7^0

Problem 11. Simplify: $(2x^4 y^{-3})(-9xy^{-2})$

Problem 12. Is π a rational or irrational number?

Problem 13. Find the distance between -2 and 5 , by first expressing it using an absolute value.

A	3
B	$\{3, 5, 6, 7\}$
C	$\frac{-18x^5}{y^5}$
D	rational
E	0
E	$\frac{y^{10}}{x^{12}}$
E	real numbers
F	$(1, 3)$
G	$35x + 16$
H	x^5
I	$-3 < x < 8$
J	2
K	absolute value
L	$\{5\}$
M	$[1, 3]$
N	xy^5
O	irrational
P	25
Q	interval notation
R	intersection
S	-1
S	graph
T	x^6y^3
T	7
U	$3 < x \leq 8$
V	union
W	$x^{10}y^{12}$
X	set-builder notation
Y	1
Z	$35x + 63$
Z	11

What was the phrase you found? (Hint: 3 words)
