

Name _____ Period _____ Date _____

Under the Sea Mystery Exponents

Solve for x. When you find a solution, see what color it corresponds to below. Then color that number on the *Under the Sea Mystery Coloring*. See example 1 for more details. Remember, as long as we have the same base, our exponents are equal.

1) $4^{\frac{x}{2}-10} = 4^{-7}$

2) $5^{-x-10} = 5^0$

3) $3^{10x-5} = 3^{105}$

4) $4^{-17} = 4^{x-2}$

5) $7^{-21} = 7^{x-19}$

6) $8^{7x} = 8^7$

7) $9^{14x} = 9^{182}$

8) $5^{6x+6} = 5^{90}$

9) $2^{\frac{3+x}{2}} = 2^3$

10) $5^{42} = 5^{-6(x+2)}$

11) $8^8 = 8^{-7+x}$

12) $6^{-3(-10+x)} = 6^{54}$

13) $5^{-63} = 5^{7-10x}$

$x = 6$ Purple	$x = -2$ Brown	$x = 3$ Grey	$x = -9$ Yellow
$x = 14$ Orange	$x = -10$ Blue	$x = 11$ Green	$x = 7$ Red
$x = 15$ Red	$x = 13$ White	$x = 1$ Pink	$x = -15$ Green
$x = -8$ Yellow			

Under Sea Mystery

