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The next three problems deal with two new functions.

The first is called the HYPERBOLIC SINE FUNCTION and is denoted as $sinh(x)$.

The second is called the HYPERBOLIC COSINE FUNCTION and is denoted as $cosh(x)$.

These two functions are both defined using either the difference or sum of exponential functions and then dividing by 2:

$$\sinh(x) = \frac{e^x - e^{-x}}{2}$$
$$\cosh(x) = \frac{e^x + e^{-x}}{2}$$

1.(1 pt)

$\sinh(0) =$ ______

$\cosh(0) =$ ______

2.(1 pt)

(a) $\sinh(7) =$ ______

(b) $\sinh(-7) =$ ______

(c) $\cosh(7) =$ ______

(d) $\cosh(-7) =$ ______

3.(1 pt)

(a) $\cosh^2(-9) - \sinh^2(-9) =$ ______

(b) $\cosh^2(-4) - \sinh^2(-4) =$ ______

(c) $\cosh^2(1) - \sinh^2(1) =$ ______

(d) $\sinh^2(6) - \cosh^2(6) =$ ______

[Note: $\sinh^2(x)$ is defined as $(\sinh(x))^2$ and $\cosh^2(x)$ is defined as $(\cosh(x))^2$]