TEST OF KNOWLEDGE

1. WHAT LIES AT THE BOTTOM OF THE OCEAN AND SHIVERS?

ANSWER: _____

$\frac{-1}{16}$ $\frac{2}{3}$ -4 -2 $\frac{-11}{20}$ $\frac{1}{60}$ $\sqrt{2}$ 2 $\frac{-1}{6}$ -2 -4 135 $\frac{3}{16}$

2. WHAT DO YOU CALL AN OVERWEIGHT LION?

ANSWER: _____

$\frac{1}{4}$ $\frac{-1}{2}$ -4 $\frac{3}{16}$ 11 $\frac{2}{3}$ $\frac{1}{16}$ $\frac{1}{60}$ $\frac{1}{21}$ -4 2 -4

3. WHAT IS THE BEST WAY TO TALK TO A MONSTER?

ANSWER: _____

$\frac{6}{5}$ $\frac{1}{60}$ $\frac{2}{3}$ $\frac{1}{16}$ 24 11 2 $\frac{1}{4}$ $\frac{-1}{16}$ $\frac{2}{3}$ 135 -4

A TEST OF KNOWLEDGE IS GIVEN ABOVE. THE ANSWER TO EACH QUESTION IS WRITTEN IN CODE UNDER THE QUESTION. TO DECODE:

Determine the slope of the tangent to the functions below at the points given. Each time this slope appears in the code, write the letter of that exercise above it.

KEEP WORKING AND YOU WILL DISCOVER THE ANSWER TO EACH QUESTION.

C: $f(x) = (x^3 + 2x)^3$ at $x = -1$

O: $g(x) = \sqrt{4 + \sqrt{x}}$ at $x = 25$

A: $f(x) = \dfrac{1}{\sqrt{x}}$ at $x = 4$

H: $g(u) = \dfrac{\sqrt[2]{u^5}}{u^3}$ at $u = 1$

S: $f(t) = t^6 + 3t^2 + 2t + 5$ at $t = 0$

G: $g(x) = \dfrac{x+1}{x+2}$ at $x = 2$

I: $f(x) = (\sqrt[3]{x^2} - 1)(2x - 1)$ at $x = 8$

T: $h(t) = \sqrt{t^3 - 2t + 5}$ at $t = 1$

K: $g(x) = \sqrt{x} + \dfrac{1}{x}$ at $x = 4$

U: $g(t) = \sqrt{2}t + \dfrac{1}{\sqrt{2}}$ at $t = 3$

W: $f(x) = \dfrac{3}{\sqrt{x+2}}$ at $x = 1$

D: $h(x) = (\dfrac{1}{x} + \dfrac{1}{x^2})(3x^3 + 27)$ at $x = -1$

N: $f(t) = \sqrt[3]{2t - 5}$ at $t = 2$

V: $y = \sqrt{\dfrac{x^2+1}{x-5}}$ at $x = 7$

L: $y^2 - 3xy + 2x^2 = 4$ at $(3,2)$

R: $\dfrac{1-y}{1+y} = x$ at $(0,1)$

B: $x^2y - 5xy^2 + 6 = 0$ at $(3,1)$

E: $\dfrac{1}{y} + \dfrac{1}{x} = 1$ at $\left(\dfrac{3}{2}, 3\right)$