

EASY AS  π LEVEL

NO CALCULATORS!

SUM OF ANSWERS =

 5

1. $\log_4 64$

$4^3 = 64$ so $\boxed{3}$

2. $\log 10$

$\boxed{1}$

3. $\log_2 \left(\frac{1}{2}\right)$

so $\boxed{-1}$
 $2^{-1} = \frac{1}{2}$

4. $\ln e^2 = \boxed{2}$

DON'T BE A SCARED CAT LEVEL

CALCULATORS ALLOWED

SUM OF ANSWERS:

1. $5^{2x+3} = 25^{3x+4}$

Round to the 10,000th place value.

2. $\log_x 81 = 2$

$x^2 = 81$

$\boxed{x=9}$



$2x+3 = 6x+8$

$-5 = 4x$

$x = -5/4$

$\boxed{-1.25}$

3. $\frac{1}{3}^{1-x-1} = 27$

$(3^{-1})^{(x-1)} = 3^3$

$-x+1=3$

$\boxed{x=-2}$

4. $\frac{1}{27}^{1-x} = \frac{1}{81}^{1-x+1}$

$3^{-3(-x)} = 3^{-4(-x+1)}$

$3x = 4x - 4$

$\boxed{+4 = x}$

SPOOKY LEVEL

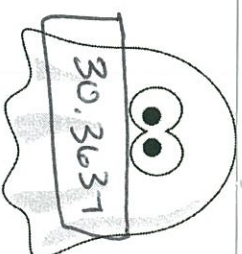
CALCULATORS ALLOWED

SUM OF ANSWERS

1. $2^{x-1} = 5$

$\log_2 5 = x-1$

$\boxed{x \approx 3.3219}$



2. $\ln 3x = 3$

$e^3 = 3x$

$\boxed{x \approx 6.6952}$

3. $4e^{2x} + 1 = 9$

$4e^{2x} = 8$

$e^{2x} = 2$

$\ln 2 = 2x$

$x \approx .34657$
 $\boxed{x \approx .3466}$

4. $2 \log x - \log 4 = 2$

$\log x^2 - \log 4 = 2$

$\log \frac{x^2}{4} = 2$

$10^2 = \frac{x^2}{4}$
 $400 = x^2$
 $\boxed{x=20}$

HAUNTED LEVEL

CALCULATORS ALLOWED

SUM OF ANSWERS: $\boxed{48.6153}$

1. $2 \ln x + \ln x^2 = 3$

$\ln x^2 + \ln x^2$

$\ln x^4 = 3$

$e^3 = x^4$

$\boxed{x \approx 2.1170}$



3. $2 \ln(2x-3) = 8$

$\ln(2x-3) = 4$

$e^4 = 2x-3$

$\boxed{x \approx 12.891}$

4. $3 \log_4 x - \log_4 2 = 5$

$\log_4 x^3 - \log_4 2 = 5$

$\log_4 \frac{x^3}{2} = 5$

$x \approx 18.692$