Edulastic

Q1: **Directions - Based on the equation, determine if it represents exponential growth or exponential decay.**

Equation	Growth or Decay?
$y = 400 \cdot .99^x$	a ▾
$y = 0.5 \cdot 3^x$	b ▾
$y = 12 \cdot 4^x$	c ▾
$y = 100 \cdot \left(\frac{1}{2}\right)^x$	d ▾

a.
- ⚪ Exponential Growth
- ⚪ Exponential Decay

b.
- ⚪ Exponential Growth
- ⚪ Exponential Decay

c.
- ⚪ Exponential Growth
- ⚪ Exponential Decay

d.
- ⚪ Exponential Growth
- ⚪ Exponential Decay

Q2: Rewrite the equation in exponential form.
$$\log_a b = c$$

A $a^b = c$

B $b^a = c$

C $b^c = a$

D $a^c = b$

Q3: Solve the equation $\log(x - 7) = 2$ Please input the answer 9999 for "No Solution".

[   ]

Q4: **Directions - Identify the key components, create an exponential equation, then answer the questions.**
Exponential Form: $y = a \cdot b^x$, a *is the starting value*, b *is the base* (*rate*).

In a small town, the stray dog population is rapidly increasing. there are currently 15 stray dogs, and it is estimated that the population will triple every year. How many dogs will there be after 1 year? 2 years? 3 years?

1) a =	4) Dogs after 1 years =
2) b =	5) Dogs after 2 years =
3) Equation:	6) Dogs after 3 years =

Q5: Solve the equation $3 \log_5 (x - 2) + 1 = 13$ Please input the answer 9999 for "No Solution".

Q6: **1)** Solve the following equation using properties of logarithms.

$\log_4 x + \log_4 (x - 6) = 2$

$x =$

2) Find the extraneous solution of the above equation, if any.

$x =$ a ▼

a.
- ⚪ -4
- ⚪ -2
- ⚪ 2
- ⚪ no extraneous solution

Q7: Part A

A function $g(x)$ is obtained by shifting the graph of the function $f(x) = x^2$ three units left, stretching the graph vertically by a factor of two, reflecting that result over the x-axis, and then translating the graph up four units. Determine the equation of the function $g(x)$.
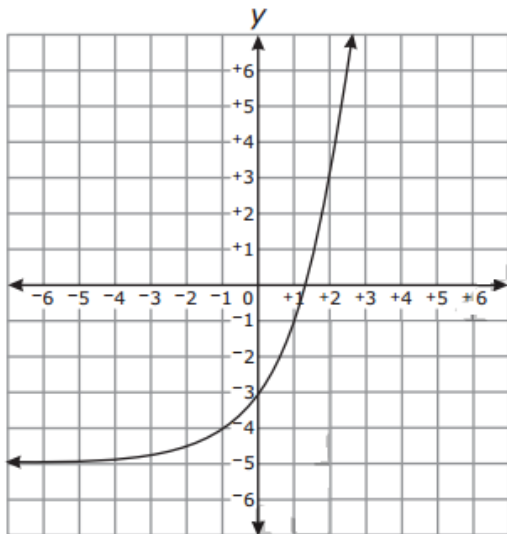
Choose the suitable option:

A $2(x+3)^2 + 4$

B $-2(x-3)^2 + 4$

C $-2(x+3)^2 + 4$

D None of the above

Part B

The function $g(x)$ is now transformed 2 units up to obtain another function $h(x)$.

The equation of the function $h(x)$ is [_____].

Q8: The function $f(x) = 2(2)^x$ was replicated with $f(x) + k$, resulting in the function graphed below.

What is the value of k?

$k = $ [_____]

Q9: Solve the equation $\log_8(x - 6) = \log_8(-x - 4)$. Please input the answer 9999 for "No Solution".

[_____]

Q10: In a class of 25 students, $\frac{3}{5}$ of the class are boys, $\frac{2}{5}$ of the class have blonde hair, and $\frac{1}{5}$ of the class are boys with blonde hair.

If one student is to be chosen at random from the class, what is the probability that the student is a boy or has blonde hair?
Show your work on the scratchpad.

P (boy or blonde hair) = [   ]

Q11: Calculate the following probabilities if an individual is chosen at random that had participated in the survey that was used to produce the following chart.

	Use Pinterest	Do Not Use Pinterest	Total
Use Instagram	45	26	71
Do Not Use Instagram	23	6	29
Total	68	32	100

If an individual is chosen that uses Instagram the probability that they use Pinterest is [a ▼] .

If an individual is chosen that uses Pinterest the probability that they use Instagram is [b ▼] .

a.
○ 0.66
○ 0.63

b.
○ 0.66
○ 0.63

Q12: Two events, A and B, are independent.

- $P(A) = 0.3$
- $P(A \text{ and } B) = 0.24$

What is $P(B)$?

$P(B) = $ [   ]