

Solve each. Round to the nearest hundredth.

1.  $\frac{3}{2} \log_2 4 - \frac{1}{2} \log_2 x = 3$

2.  $\log_4(x^2 - 12x) = 3$

3. Let the function  $g$  be defined by  $g(x) = 5x + 2$ . If  $\sqrt{g\left(\frac{a}{2}\right)} = 6$ , what is the value of  $a$ ?

A.  $\frac{1}{\sqrt{6}}$

B.  $\frac{1}{\sqrt{2}}$

C.  $\frac{5}{2}$

D.  $\frac{34}{5}$

E.  $\frac{68}{5}$

4. A straight fence is to be constructed from posts 6 inches wide and separated by lengths of chain 5 feet long. If a certain fence begins and ends with a post, which of the following could not be the length of the fence in feet? (12 inches = 1 foot)

A. 17

B. 28

C. 35

D. 39

E. 50

Solve each. Round to the nearest hundredth.

1.  $(\frac{3}{2} \log_2 4 - \frac{1}{2} \log_2 x = 3) 2$

$$3 \log_2 4 - \log_2 x = 6$$

$$\log_2 4^3 - \log_2 x = 6$$

$$\log_2 \frac{64}{x} = 6$$

$$2^6 = \frac{64}{x}$$

$$64 = \frac{64}{x}$$

$$x = 1$$

2.  $\log_4(x^2 - 12x) = 3$

$$4^3 = x^2 - 12x$$

$$64 = x^2 - 12x$$

$$0 = x^2 - 12x - 64$$

$$(x - 16)(x + 4)$$

$$x = 16, -4$$

$$\begin{array}{r} -64 \\ -16 \quad +4 \\ -12 \end{array}$$

Both are sol's

3. Let the function  $g$  be defined by  $g(x) = 5x + 2$ . If  $\sqrt{g(\frac{a}{2})} = 6$ , what is the value of  $a$ ?

A.  $\frac{1}{\sqrt{6}}$

B.  $\frac{1}{\sqrt{2}}$

C.  $\frac{5}{2}$

D.  $\frac{34}{5}$

E.  $\frac{68}{5}$

$$\left(\sqrt{5\left(\frac{a}{2}\right) + 2}\right)^2 = (6)^2$$

$$5\left(\frac{a}{2}\right) + 2 = 36$$

$$\frac{2}{5} \cdot \frac{5}{2} a = 34 \cdot \frac{2}{5}$$

$$a = 68/5$$

4. A straight fence is to be constructed from posts 6 inches wide and separated by lengths of chain 5 feet long. If a certain fence begins and ends with a post, which of the following could not be the length of the fence in feet? (12 inches = 1 foot)

A. 17

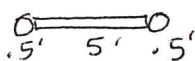
B. 28

C. 35

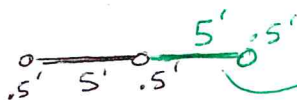
D. 39

E. 50

$$6'' = .5 \text{ ft}$$



first section w/ 2 posts = 6 ft



every additional section adds 5.5'

$$6 + 5.5x = 17$$

$$x = 2$$

$$6 + 5.5x = 28$$

$$x = 4$$

$$6 + 5.5x = 35$$

$$x = 5.8 \text{ X}$$

$$6 + 5.5x$$

$x = \#$  sections of fencing after 1st section  
 $x$  must be a whole #