

Student: _____
Date: _____
Time: _____

Instructor: Garth Isaak
Course: precalc blitzer (1)
Book: Blitzer: Precalculus Essentials, 3e

Assignment: Functions and graphs practice
diagnostic 3a

1. Evaluate the function at the given value of the independent variable and simplify.

$$f(x) = x^2 + 2; f(x - 4)$$

- A. $x^2 - 8x + 16$
 B. $x^2 - 8x + 18$
 C. $x^2 + 16$
 D. $x^2 - 2$
-

2. Find and simplify the difference quotient $\frac{f(x+h) - f(x)}{h}$, $h \neq 0$ for the given function.

$$f(x) = 2x - 4$$

- A. 2
 B. 0
 C. $2 + \frac{4(x-4)}{h}$
 D. $2 - \frac{8}{h}$
-

3. Use the given conditions to write an equation for the line in slope-intercept form.

$$\text{Slope} = 3, \text{ passing through } (5, 8)$$

- A. $y - 8 = x - 5$
 B. $y - 8 = 3x - 5$
 C. $y = 3x + 7$
 D. $y = 3x - 7$
-

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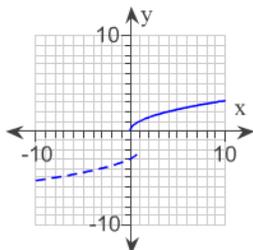
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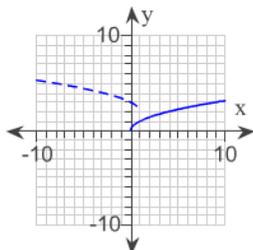
4. Begin by graphing the standard square root function $f(x) = \sqrt{x}$. Then use transformations of this graph to graph the given function.

$$h(x) = \sqrt{-x + 1} - 2$$

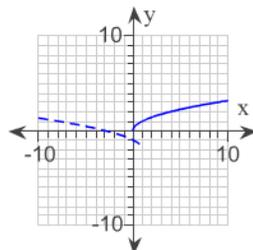
A.



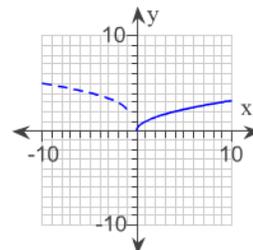
B.



C.



D.



5. Find functions f and g so that $h(x) = (f \circ g)(x)$.

$$h(x) = \frac{3}{x^2} + 7$$

- A. $f(x) = x, g(x) = 3/x + 7$
 B. $f(x) = 3/x^2, g(x) = 7$
 C. $f(x) = 1/x, g(x) = 3/x + 7$
 D. $f(x) = x + 7, g(x) = 3/x^2$

6. Find the inverse of the one-to-one function.

$$f(x) = 8x - 8$$

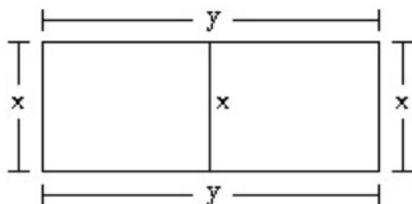
- A. $f^{-1}(x) = \frac{8x + 8}{8}$
 B. $f^{-1}(x) = \frac{y + 8}{8}$
 C. $f^{-1}(x) = \frac{x - 8}{8}$
 D. $f^{-1}(x) = \frac{x + 8}{8}$

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7. The area of a rectangular garden is 169 square feet. The garden is to be enclosed by a stone wall costing \$29 per linear foot. The interior wall is to be constructed with brick costing \$7 per linear foot. Express the cost C , to enclose the garden and add the interior wall as a function of x .



- A. $C(x) = 29x + 7 \left(2x + \frac{338}{x} \right)$
- B. $C(x) = 7x + 29 \left(2x + \frac{338}{x} \right)$
- C. $C(x) = 7x + 29 \left(2x + \frac{169}{x} \right)$
- D. $C(x) = 7x + 29 \left(x + \frac{169}{x} \right)$

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1. B

2. A

3. D

4. C

5. D

6. D

7. B
