

**A2.A.41: Functional Notation: Use functional notation to evaluate functions for given values in the domain**

1 If  $f(x) = x^2 - 2x + 3$ , find the value of  $f(-2)$ .

10 If  $f(x) = \sqrt{29 - x^2}$ , find  $f(-2)$ .

2 If  $f(x) = 3 - x^2$ , find  $f(-2)$ .

11 If  $f(x) = \frac{x}{x^2 - 16}$ , what is the value of  $f(-10)$ ?

1)  $-\frac{5}{2}$

2)  $-\frac{5}{42}$

3)  $\frac{5}{58}$

4)  $\frac{5}{18}$

3 If  $f(x) = -2x^2 + 6$ , find the value of  $f(-3)$ .

4 If  $f(x) = x^2 + 3x - 5$ , find the value of  $f(3)$ .

5 If  $f(x) = x^3 - 2x$ , find  $f(-2)$ .

12 If  $f(x) = |x^3 - 3|$ , then  $f(-1)$  is equivalent to

1) 0

2) 2

3) -2

4) 4

6 If  $f(x) = x^2 - 3x$ , find  $f(-1.8)$ .

7 If  $f(x) = 2x^3 + 4x^2$ , find  $f(-3)$ .

13 Given: the function  $f$  defined by  $f(x) = 3x^2 - 4$ .  
Which statement is true?

1)  $f(0) = 0$

2)  $f(-2) = f(2)$

3)  $f(5) + f(2) = f(7)$

4)  $f(5) \cdot f(2) = f(10)$

8 If  $f(x) = (2x)^2$ , find  $f(-4)$ .

9 If  $f(x) = \sqrt{25 - x^2}$ , find  $f(3)$ .

14 If  $f(x) = 3x - 4$  and  $g(x) = x^2$ , find the value of  $f(3) - g(2)$ .

15 If  $g(x) = \left(ax\sqrt{1-x}\right)^2$ , express  $g(10)$  in simplest form.

16 If  $f(x) = \frac{x-4}{x+4}$ , then  $f(4a)$  equals

- 1)  $\frac{a-1}{a+1}$
- 2)  $\frac{a+1}{a-1}$
- 3)  $\frac{4a-1}{4a+1}$
- 4)  $\frac{4a+1}{4a-1}$

17 If  $f(x) = \frac{x-2}{x+1}$ , then  $f(n+1)$  is equal to

- 1)  $-\frac{1}{2}$
- 2)  $\frac{n+1}{n-2}$
- 3)  $\frac{n-1}{n+2}$
- 4)  $\frac{n-2}{n+1}$

18 If  $f(x) = x^2 - 3$ , then  $f(a-b)$  is equivalent to

- 1)  $a^2 - b^2 - 3$
- 2)  $a^2 - 2ab - b^2 - 3$
- 3)  $a^2 - 2ab + b^2 - 3$
- 4)  $a^2 + b^2 - 3$

19 If  $f(x) = 4x^2 - x + 1$ , then  $f(a+1)$  equals

- 1)  $4a^2 - a + 6$
- 2)  $4a^2 - a + 4$
- 3)  $4a^2 + 7a + 6$
- 4)  $4a^2 + 7a + 4$

20 If  $f(x) = 2x^2 - 3x + 4$ , then  $f(x+3)$  is equal to

- 1)  $2x^2 - 3x + 7$
- 2)  $2x^2 - 3x + 13$
- 3)  $2x^2 + 9x + 13$
- 4)  $2x^2 + 9x + 25$

21 If  $f(x) = kx^2$ , and  $f(2) = 12$ , then  $k$  equals

- 1) 1
- 2) 2
- 3) 3
- 4) 4

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### Answer Section

1 ANS:  
11

REF: 088501siii

2 ANS:  
-1

REF: 068602siii

3 ANS:  
-12

REF: 088603siii

4 ANS:  
13

REF: 018701siii

5 ANS:  
-4

REF: 068702siii

6 ANS:  
8.64

REF: 019904siii

7 ANS:  
-18

REF: 010303siii

8 ANS:  
64

REF: 069801siii

9 ANS:  
4

REF: 069601siii

10 ANS:  
5

REF: 060102siii

11 ANS: 2

$$f(10) = \frac{-10}{(-10)^2 - 16} = \frac{-10}{84} = -\frac{5}{42}$$

REF: 061102a2

12 ANS: 4 REF: 019020siii

13 ANS: 2 REF: 089422siii

14 ANS:  
1

REF: 080001siii

15 ANS:

$$g(10) = \left( a(10)\sqrt{1-10} \right)^2 = 100a^2(-9) = -900a^2$$

REF: 061333a2

16 ANS: 1 REF: 019517siii

17 ANS: 3 REF: 018616siii

18 ANS: 3 REF: 089525siii

19 ANS: 4

$$f(a+1) = 4(a+1)^2 - (a+1) + 1$$

$$= 4(a^2 + 2a + 1) - a$$

$$= 4a^2 + 8a + 4 - a$$

$$= 4a^2 + 7a + 4$$

REF: 011527a2

20 ANS: 3

$$f(x+3) = 2(x+3)^2 - 3(x+3) + 4 = 2x^2 + 12x + 18 - 3x - 9 + 4 = 2x^2 + 9x + 13$$

REF: 011619a2

21 ANS: 3 REF: 018915siii