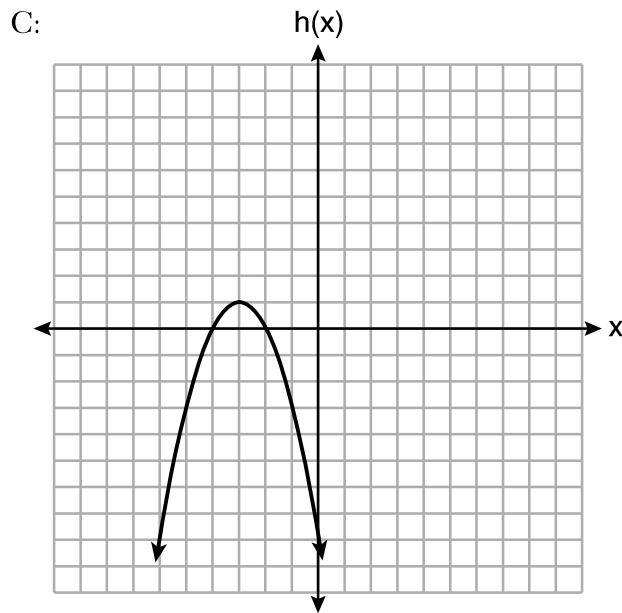


Use this space for
computations.

14 Three functions are shown below.

A: $g(x) = -\frac{3}{2}x + 4$

B: $f(x) = (x + 2)(x + 6)$



Which statement is true?

- (1) B and C have the same zeros.
- (2) A and B have the same y -intercept.
- (3) B has a minimum and C has a maximum.
- (4) C has a maximum and A has a minimum.

15 Nicci's sister is 7 years less than twice Nicci's age, a . The sum of Nicci's age and her sister's age is 41. Which equation represents this relationship?

- (1) $a + (7 - 2a) = 41$
- (2) $a + (2a - 7) = 41$
- (3) $2a - 7 = 41$
- (4) $a = 2a - 7$

Use this space for
computations.

- 16 The population of a small town over four years is recorded in the chart below, where 2013 is represented by $x = 0$. [Population is rounded to the nearest person]

Year	2013	2014	2015	2016
Population	3810	3943	4081	4224

The population, $P(x)$, for these years can be modeled by the function $P(x) = ab^x$, where b is rounded to the nearest thousandth. Which statements about this function are true?

- I. $a = 3810$
- II. $a = 4224$
- III. $b = 0.035$
- IV. $b = 1.035$

- (1) I and III
- (2) I and IV
- (3) II and III
- (4) II and IV

- 17 When written in factored form, $4w^2 - 11w - 3$ is equivalent to

- (1) $(2w + 1)(2w - 3)$
- (2) $(2w - 1)(2w + 3)$
- (3) $(4w + 1)(w - 3)$
- (4) $(4w - 1)(w + 3)$

- 18 Which ordered pair does *not* represent a point on the graph of $y = 3x^2 - x + 7$?

- (1) $(-1.5, 15.25)$
- (2) $(0.5, 7.25)$
- (3) $(1.25, 10.25)$
- (4) $(2.5, 23.25)$

- 19 Given the following three sequences:

- I. 2, 4, 6, 8, 10...
- II. 2, 4, 8, 16, 32...
- III. $a, a + 2, a + 4, a + 6, a + 8...$

Which ones are arithmetic sequences?

- (1) I and II, only
- (2) I and III, only
- (3) II and III, only
- (4) I, II, and III

Use this space for
computations.

20 A grocery store sells packages of beef. The function $C(w)$ represents the cost, in dollars, of a package of beef weighing w pounds. The most appropriate domain for this function would be

- (1) integers (3) positive integers
(2) rational numbers (4) positive rational numbers

21 The roots of $x^2 - 5x - 4 = 0$ are

- (1) 1 and 4 (3) -1 and -4
(2) $\frac{5 \pm \sqrt{41}}{2}$ (4) $\frac{-5 \pm \sqrt{41}}{2}$

22 The following table shows the heights, in inches, of the players on the opening-night roster of the 2015-2016 New York Knicks.

84	80	87	75	77	79	80	74	76	80	80	82	82
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The population standard deviation of these data is approximately

- (1) 3.5 (3) 79.7
(2) 13 (4) 80

23 A population of bacteria can be modeled by the function $f(t) = 1000(0.98)^t$, where t represents the time since the population started decaying, and $f(t)$ represents the population of the remaining bacteria at time t . What is the rate of decay for this population?

- (1) 98% (3) 0.98%
(2) 2% (4) 0.02%

24 Bamboo plants can grow 91 centimeters per day. What is the approximate growth of the plant, in inches per hour?

- (1) 1.49 (3) 9.63
(2) 3.79 (4) 35.83