Test 4 Review

Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) $f(x)=x^2 + 14x + 40$ 1) _____

(a) Find y-intercept

(b) Find x-intercepts

Using factoring

Using Completing Square

Using Quadratic Formula

(c) Find vertex

Using vertex formula

Using completing square to rewrite the function $f(x)=a(x-h)^2+k$

(d) Graph f(x)

(e) Find line of symmetry

(f) Find domain

(g) Find range

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use the square root property to solve the equation.

2) $x^2 = 25$ 2) _____

A) $\{6, -6\}$ B) $\{5\}$ C) $\{12.5\}$ D) $\{5, -5\}$

3) $-3k^2 + 108 = 0$ 3) _____

A) $\{12, -12\}$ B) $\{6\}$ C) $\{6, -6\}$ D) $\{-63.5\}$

4) $(p - 2)^2 = 3$ 4) _____

A) $\{2 + \sqrt{3}\}$ B) $\{2 + \sqrt{3}, 2 - \sqrt{3}\}$

C) $\{\sqrt{3} - \sqrt{-2}\}$ D) $\{\sqrt{3} - 2, -\sqrt{3} - 2\}$

5) $(2s + 6)^2 = 25$ 5) _____

A) $\left\{-\frac{1}{2}, -\frac{11}{2}\right\}$ B) $\left\{\frac{1}{2}, \frac{11}{2}\right\}$ C) $\left\{\frac{19}{2}\right\}$ D) $\left\{-\frac{1}{2}, 0\right\}$

6) $(x + 16)^2 - 2 = 0$ 6) _____

A) $\{-14, 18\}$ B) $\{-4 + \sqrt{2}, -4 - \sqrt{2}\}$

C) $\{-16 + i\sqrt{2}, -16 - i\sqrt{2}\}$ D) $\{-16 + \sqrt{2}, -16 - \sqrt{2}\}$

Find the term that should be added to the expression to form a perfect square trinomial. Write the resulting perfect square trinomial in factored form.

7) $x^2 + 12x +$ 7) _____

A) $144; (x + 12)^2$ B) $36; (x + 6)^2$ C) $36; (x - 6)^2$ D) $0; (x + 6)^2$

8) $x^2 - \frac{5}{6}x +$ 8) _____

A) $\frac{25}{36}; \left(x - \frac{5}{12}\right)^2$ B) $\frac{25}{144}; \left(x - \frac{5}{12}\right)^2$ C) $\frac{25}{144}; \left(x + \frac{5}{12}\right)^2$ D) $0; \left(x - \frac{5}{12}\right)^2$

Determine the number that will complete the square to solve the equation after the constant term has been written on the right side. Do not actually solve.

9) $3x^2 + x - 4 = 0$ 9) _____

A) 36 B) $\frac{1}{4}$ C) $\frac{1}{36}$ D) $-\frac{1}{36}$

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the equation by completing the square.

10) $p^2 + 3p - 9 = 0$ 10) _____

11) $7x^2 + 2x - 5 = 0$ 11) _____

12) $2n^2 = -10n - 6$ 12) _____

Find the nonreal complex solutions of the equation.

13) $-5x^2 - 4x - 4 = 0$ 13) _____

14) $x^2 + x + 1 = 0$ 14) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use the quadratic formula to solve the equation. (All solutions are real numbers.)

15) $\frac{z^2}{3} = \frac{z}{2} + \frac{5}{6}$ 15) _____

A) $\left\{\frac{3 + 2\sqrt{10}}{4}, \frac{3 - 2\sqrt{10}}{4}\right\}$

B) $\left\{-1, \frac{5}{2}\right\}$

C) $\left\{\frac{5}{2}\right\}$

D) $\{-1\}$

16) $3x(x + 5) = 2$ 16) _____

A) $\left\{\frac{-15 + \sqrt{249}}{6}, \frac{-15 - \sqrt{249}}{6}\right\}$

B) $\left\{\frac{15 + \sqrt{249}}{6}, \frac{15 - \sqrt{249}}{6}\right\}$

C) $\left\{-\frac{3}{5}\right\}$

D) $\{1\}$

Solve the equation.

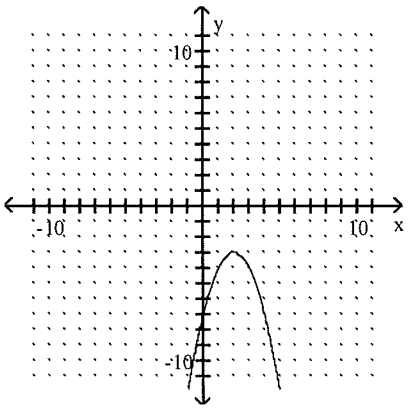
17) $1 - \frac{2}{x} - \frac{35}{x^2} = 0$ 17) _____

A) $\{-7, 5\}$ B) $\{7, 5\}$ C) $\{-7, -5\}$ D) $\{7, -5\}$

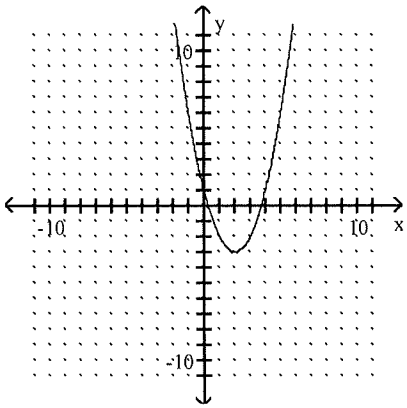
Identify which graph matches the equation.

18) $f(x) = (x - 2)^2 - 3$ 18) _____

A



B



A) A

B) B

Solve by using the quadratic formula.

19) $2m^2 + 6m + 2 = 0$ 19) _____

A) $\left\{\frac{-3+\sqrt{13}}{2}, \frac{-3-\sqrt{13}}{2}\right\}$

B) $\left\{\frac{-3+\sqrt{5}}{2}, \frac{-3-\sqrt{5}}{2}\right\}$

C) $\left\{\frac{-6+\sqrt{5}}{2}, \frac{-6-\sqrt{5}}{2}\right\}$

D) $\left\{\frac{-3+\sqrt{5}}{4}, \frac{-3-\sqrt{5}}{4}\right\}$

Answer Key
Testname: 1033 TEST 4 QUADRATIC REVIEW

1) $\{-10, -4\}$
2) D
3) C
4) B
5) A
6) D
7) B
8) B
9) C
10) $\left\{\frac{-3 + 3\sqrt{5}}{2}, \frac{-3 - 3\sqrt{5}}{2}\right\}$
11) $\left\{\frac{5}{7}, -1\right\}$
12) $\left\{\frac{-5 + \sqrt{13}}{2}, \frac{-5 - \sqrt{13}}{2}\right\}$
13) $\left\{\frac{-2 + 4i}{5}, \frac{-2 - 4i}{5}\right\}$
14) $\left\{\frac{-1 + i\sqrt{3}}{2}, \frac{-1 - i\sqrt{3}}{2}\right\}$
15) B
16) A
17) D
18) B
19) B