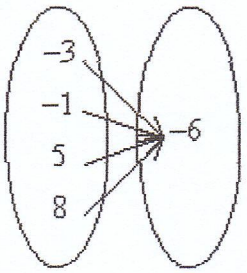
Name: _____ Class: _____ Date: _____ ID: A

Algebra 2 Cumulative Review Practice

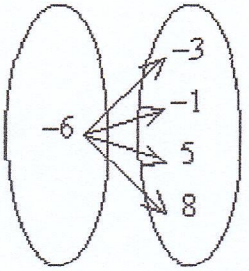
1. (1 point)
Identify the mapping diagram that represents the relation and determine whether the relation is a function.
$\{(-3,-6),(-1,-6),(5,-6),(8,-6)\}$

a.



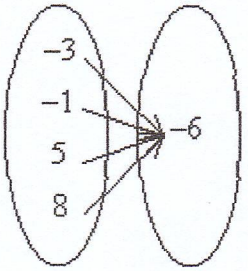
The relation is not a function.

c.



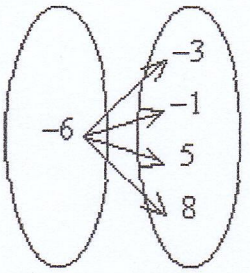
The relation is a function.

b.



The relation is a function.

d.



The relation is not a function.

2. (1 point)
Write the polynomial in standard form. Then name the polynomial based on its degree and number of terms.
$2 - 11x^2 - 8x + 6x^2$

a. $-5x^2 - 8x + 2$; quadratic trinomial
b. $5x^2 - 8x - 2$; quadratic trinomial
c. $-6x^2 - 8x - 2$; cubic polynomial
d. $6x^2 - 8x + 2$; cubic trinomial

Find the degree of the monomial.

3. (1 point)
$7m^6n^5$

a. 5 b. 11 c. 6 d. 7

Simplify the difference.

4. (1 point)
$(-7x - 5x^4 + 5) - (-7x^4 - 5 - 9x)$

a. $2x^4 + 2x + 8$
b. $-14x^4 + 10x + 10$
c. $-14x^4 - 10x + 10$
d. $2x^4 + 2x + 10$

Simplify the product.

5. (1 point)
$5a^2(3a^4 + 3b)$

a. $8a^4 + 8ab$
b. $15a^8 + 3b$
c. $15a^6 + 15a^2b$
d. $8a^6 + 15a^2b$

Factor the polynomial.

6. (1 point)
$2x^3 + 4x^2 + 8x$

a. $2x(x^2 + 2x + 4)$
b. $2x(x + 2)(x + 4)$
c. $x(2x^2 + 4x + 8)$
d. $2x^3 + 4x^2 + 8x$

7. (1 point)
Simplify the product using the distributive property.

$(5h - 5)(5h - 6)$

a. $25h^2 + 5h - 30$
b. $25h^2 - 55h + 30$
c. $25h^2 - 5h - 30$
d. $25h^2 + 55h + 30$

Find the product.

8. (1 point)
$(j + 7)(j - 7)$

a. $j^2 + 14j - 49$
b. $j^2 - 14j - 49$
c. $j^2 + 14j - 49$
d. $j^2 - 49$

Factor the expression.

9. (1 point)
$w^2 + 18w + 77$

a. $(w - 7)(w + 11)$
b. $(w - 7)(w - 11)$
c. $(w + 7)(w + 11)$
d. $(w + 1)(w + 77)$

10. (1 point)
$x^2 - x - 42$

a. $(x - 7)(x + 6)$
b. $(x + 7)(x + 6)$
c. $(x + 7)(x - 6)$
d. $(x - 7)(x - 6)$

11. *(1 point)*
$12d^2 + 4d - 1$

a. $(6d + 1)(2d + 1)$
b. $(6d - 1)(2d - 1)$
c. $(6d - 1)(2d + 1)$
d. $(6d + 1)(2d - 1)$

Use the quadratic formula to solve the equation. If necessary, round to the nearest hundredth.

12. (1 point)
$2a^2 - 46a + 252 = 0$

a. 18, 28
b. –9, –14
c. 9, 14
d. –18, 28

13. (1 point)
$5y^2 - 8y = 2$

a. 1.82, –0.22
b. 11.2, –9.6
c. 3.64, –0.44
d. 0.22, –1.82

Use any method to solve the equation. If necessary, round to the nearest hundredth.

14. (1 point)
$7x^2 - 16x - 28 = 0$

a. 3.45, –1.16
b. –3.45, 1.16
c. 2.3, –2.3
d. 6.89, –2.32

15. (1 point)
$8x^2 - 6 = 0$

a. 2.45, –2.45
b. 1.15, –1.15
c. 0.87, –0.87
d. 2.83, –2.83

Simplify the radical expression.

16. (1 point)
$-3\sqrt{180h^4}$

a. $6\sqrt{5h^4}$
b. $-18\sqrt{5h^4}$
c. $-18h^2\sqrt{5}$
d. $-3h\sqrt{90}$

Simplify the expression.

17. (1 point)
$\sqrt{6}+2\sqrt{6}$
a. $3\sqrt{6}$ b. $-\sqrt{6}$ c. $3\sqrt{12}$ d. $-\sqrt{12}$

18. (1 point)
$4\sqrt{7}+8\sqrt{63}$
a. $76\sqrt{7}$ b. $12\sqrt{63}$ c. $28\sqrt{7}$ d. $28\sqrt{63}$

19. (1 point)
$\dfrac{8}{\sqrt{6}-\sqrt{3}}$
a. $\dfrac{8\sqrt{6}-8\sqrt{3}}{3}$ c. $\dfrac{8\sqrt{6}+8\sqrt{3}}{\sqrt{27}}$
b. $\dfrac{8\left(\sqrt{6}+\sqrt{3}\right)}{9}$ d. $\dfrac{8\sqrt{6}+8\sqrt{3}}{3}$

Solve the equation. Check your solution.

20. (1 point)
$4=\sqrt{m}-8$
a. 6 b. 144 c. $2\sqrt{3}$ d. 12

21. (1 point)
$\sqrt{r+5}=11$
a. 126 b. 6 c. 17 d. 116

Solve the equation. Identify any extraneous solutions.

22. (1 point)
$x=\sqrt{-3x+40}$
a. 8 is a solution to the original equation. The value –5 is an extraneous solution.
b. 5 and 8 are both extraneous solutions.
c. 5 is a solution to the original equation. The value –8 is an extraneous solution.
d. 5 and –8 are solutions.

Write the number in the form $a + bi$.

23. (1 point)
$\sqrt{-36} + 10$

a. $6 + 10i$
b. $36 + 10i$
c. $10 + i\sqrt{36}$
d. $10 + 6i$

Simplify the expression.

24. (1 point)
$(1 - 6i) + (3 + i)$

a. $4 - 5i$
b. $-4 + 5i$
c. $-5 + 4i$
d. $-i$

25. (1 point)
$(4 + i) - (-5 - 3i)$

a. $9 + 4i$
b. $-9 - 4i$
c. $-1 - 2i$
d. $13i$

26. (1 point)
$(4 - 2i)(-5 + 3i)$

a. $-26 + 22i$
b. $-20 + 22i$
c. $-20 - 6i$
d. $-14 + 22i$

Algebra 2 Cumulative Review Practice
Answer Section

1. ANS: B
2. ANS: A
3. ANS: B
4. ANS: D
5. ANS: C
6. ANS: A
7. ANS: B
8. ANS: D
9. ANS: C
10. ANS: A
11. ANS: C
12. ANS: C
13. ANS: A
14. ANS: A
15. ANS: C
16. ANS: C
17. ANS: A
18. ANS: C
19. ANS: D
20. ANS: B
21. ANS: D
22. ANS: C
23. ANS: D
24. ANS: A
25. ANS: A
26. ANS: D