

Algebra 2B
Final Exam Review 2

Name _____

Date _____ Period _____

- _____ 1. If $f(x) = 3x^5 - 8x^4 - 2x^2 - 10x + 1$, find $f(2)$
- A. -211 B. -123 C. -59 D. -65
- _____ 2. If x varies directly as y and $x = -20$ when $y = 4$, find y when $x = 8$.
- A. -1.6 B. -5 C. -10 D. -40
- _____ 3. What is the vertex of $y = 3x^2 + 6x - 2$
- A. (-1, -2) B. (-1, -5) C. (-2, -2) D. (2, 22)
- _____ 4. Find the maximum value of g if $g(x) = 7 - 8x - 2x^2$
- A. 7 B. -2 C. 15 D. -17
- _____ 5. Find the nature of the roots of: $8x^2 + 2 = -10x$ (*Hint: use discriminant*)
- A. 2 real irrational. roots B. 2 real rational roots
C. 1 real rational double root D. 2 imaginary conjugate roots
- _____ 6. What is the y-intercept of the graph of $y = (x + 3)^2 - 2$
- A. 7 B. -2 C. -3 D. 3
- _____ 7. Simplify: $\left(\frac{2x^2}{-y}\right)^4$
- A. $-\frac{2x^8}{y^4}$ B. $\frac{2x^8}{y^4}$ C. $-\frac{16x^8}{y^4}$ D. $\frac{16x^8}{y^4}$

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_____ 8. Simplify: $(3x^{-3}y^4)^{-2}$

A. $\frac{x^6}{9y^8}$

B. $\frac{-9x^6}{y^8}$

C. $\frac{-9y^2}{x^5}$

D. $\frac{y^8}{9x^6}$

_____ 9. Simplify: $(3x^2y)^0(2x)^{-3}$

A. $8x^3$

B. $\frac{-8}{x^3}$

C. $\frac{3y}{8x}$

D. $\frac{1}{8x^3}$

_____ 10. Simplify: $\frac{x^2 - 8x + 15}{x^2 - 2x - 3} \div \frac{25 - x^2}{x + 1}$

A. $\frac{-1}{5 + x}$

B. $5 + x$

C. $\frac{-(x+1)}{(5+x)(5-x)}$

D. $\frac{x}{1-x^2}$

_____ 11. Simplify: $\frac{1-x}{x^2} + \frac{2+x}{2x}$

A. $\frac{x+1}{x}$

B. $\frac{x^2+2}{2x^3}$

C. $\frac{x^2+2}{2x^2}$

D. $\frac{x+2}{2x}$

_____ 12. Solve: $\frac{1}{x+2} + \frac{1}{x-1} = \frac{3}{x^2+x-2}$

A. $\{-2, 1\}$

B. $\{2\}$

C. $\{1\}$

D. no solution

Answers:

1. C

3. B

5. B

7. D

9. D

11. C

2. A

4. C

6. A

8. A

10. A

12. D

Algebra 2B
Final Exam Review 3

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Date _____ Period _____

- _____ 1. Find the vertex of $y = 2x^2 - 12x + 5$
- A. $(-3, 59)$ B. $(3, 5)$ C. $(6, 5)$ D. $(3, -13)$
- _____ 2. Rewrite $y = 4x^2 + 8x - 5$ in $y = a(x - h)^2 + k$ form.
- A. $y = (x+1)^2 - 9$ B. $y = 4(x-1)^2 - 9$ C. $y = 4(x+1)^2 - 9$ D. $y = 4(x+2)^2 - 5$
- _____ 3. Determine whether $y = -x^2 - 8x + 2$ has a maximum or minimum value. Find the value.
- A. $\max = -4$ B. $\max = 18$ C. $\min = -4$ D. $\min = 18$
- _____ 4. Find the nature of the roots of $4x^2 + 3 = 7x$.
- A. 2 real irrational roots B. 2 real rational roots
C. 1 real double root D. 2 imaginary conjugate roots
- _____ 5. What is the y-intercept of the graph of $y = 2(x - 1)^2 + 3$
- A. 5 B. 3 C. 2 D. 1
- _____ 6. Multiply: $(2x - 3)^2$
- A. $4x^2 - 9$ B. $4x^2 + 9$ C. $4x^2 - 12x + 9$ D. $4x^2 + 12x + 9$

