

Algebra 2B
Final Exam Review 6

Name _____

Date _____ Period _____

- _____ 1. Find the vertex of the parabola: $x = 2(y - 3)^2 + 4$
- A. (3, 4) B. (-3, 4) C. (4, -3) D. (4, 3)
- _____ 2. Solve $3^{2x} = 8$
- A. 0.61 B. 0.95 C. 1.38 D. 0.26
- _____ 3. Solve $\log_2 32 = x$
- A. 16 B. $4\sqrt{2}$ C. 4 D. 5
- _____ 4. Evaluate $\log_9 \frac{1}{81}$
- A. 2 B. -2 C. $\frac{1}{2}$ D. $-\frac{1}{2}$
- _____ 5. Solve for x: $\log_5 3 - \frac{1}{2} \log_5 x = \log_5 \frac{1}{2}$
- A. $-\frac{1}{36}$ B. $\frac{1}{36}$ C. 36 D. -36
- _____ 6. What is the y-intercept of the graph of $y = 2(x - 1)^2 + 3$
- A. 5 B. 3 C. 2 D. 1

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Simplify completely.

1. $(4x^2 - 6x + 3) - (12x^2 - 12x - 5)$

2. $(3x^3y^2)(9x^5y^6)$

3. 9^0

4. $\frac{25k^5a^4}{40ka^{11}}$

5. $(2c^5d)^4$

6. 4^{-2}

7. $(-3y^4z)^2(2y^2z^2)^3$

8. $\frac{(18c^4y^3)^2}{180c^{10}y^{10}}$

9. $\frac{20k^{-6}z^4}{30k^{-4}z^{-3}}$

10. $\left(\frac{24a^{-3}c^5d^{-6}}{36a^{-5}c^4d^{-2}}\right)^{-2}$

11. $\sqrt{50x^{10}k^7}$

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12. $\sqrt[3]{72a^{11}y^{15}}$

13. $5\sqrt{12} + 3\sqrt{27}$

14. i^{21}

15. $(12i^5)(3i^{10})$

16. $\sqrt{-30} \cdot \sqrt{-42}$

17. $\frac{40}{\sqrt{20}}$

18. $\frac{20}{10i}$

19. $\frac{10}{3 - \sqrt{5}}$

20. $\frac{15}{4i + 2}$

Answers:

1. $-8x^2 + 6x + 8$

2. $27x^8y^8$

3. 1

4. $\frac{5k^4}{8a^7}$

5. $16c^{20}d^4$

6. $\frac{1}{16}$

7. $72y^{14}z^8$

8. $\frac{9}{5c^2y^4}$

9. $\frac{2z^7}{3k^2}$

10. $\frac{9d^8}{4a^4c^2}$

11. $5x^5k^3\sqrt{2k}$

12. $2a^3y^5\sqrt[3]{9a^2}$

13. $19\sqrt{3}$

14. i

15. $-36i$

16. $-6\sqrt{35}$

17. $4\sqrt{5}$

18. $-2i$

19. $\frac{15 + 5\sqrt{5}}{2}$

20. $\frac{3 - 6i}{2}$

#1 Simplify: $4\sqrt{578} \cdot \sqrt{34}$

- A. $16\sqrt{4913}$
- B. $272\sqrt{17}$
- C. $136\sqrt{17}$
- D. $68\sqrt{2}$

#2 Solve for all x : $11x^2 = 891$

- A. 9
- B. $\pm\sqrt{9801}$
- C. $\pm\sqrt{880}$
- D. ± 9

#3 Solve: $3x^2 + 7 = 34$

- A. $\pm 3\sqrt{2}$
- B. $\pm 2\sqrt{3}$
- C. ± 3
- D. ± 2

#4 Solve: $\sqrt{x^2 + 5} = x + 4$

- A. $\frac{11}{8}$
- B. 2
- C. -11
- D. $-\frac{11}{8}$

Answers:

1.) C 2.) D 3.) C 4.) D