

Practice for Semester 1 Exam

Date_____ Period_____

Evaluate.

1) $\begin{vmatrix} 2 & 0 \\ 0 & 5 \end{vmatrix}$

2) $\begin{vmatrix} 5 & 2 \\ 1 & 1 \end{vmatrix}$

Solve each equation by factoring.

3) $x^2 + 13x = -40$

4) $10x^2 = 1 + 3x$

Find the discriminant of each quadratic equation then state the number and type of solutions.

5) $-5k^2 + 6k - 4 = 0$

6) $5a^2 - a + 1 = 0$

Solve each equation with the quadratic formula.

7) $2v^2 + v - 15 = 0$

8) $x^2 - 2x - 8 = 0$

Simplify.

9) $4x^3y^2 \cdot -3x^2y^3$

10) $3n^{\frac{1}{4}} \cdot n^{\frac{5}{4}}$

11) $\left(m^{\frac{3}{2}}\right)^3$

12) $\sqrt[3]{16}$

13) Find the distance between the two points and the coordinates of the midpoint of the line segment between the two points: (5,1), (5,11).

14) If \$20,000 is invested at an interest rate of 5% for 30 years, find the total amount of the investment if the interest is (a) compounded quarterly, and (b) continuously compounded.

Use the information provided to write the standard form equation of each circle.

15) Center: (0, 0)
Radius: 7

16) Center: (2, 7)
Radius: 11

Answers to Practice for Semester 1 Exam

1) 10

2) 3

3) $\{-8, -5\}$

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

5) -44 ; two imaginary solutions

6) -19 ; two imaginary solutions

7) $\left\{\frac{5}{2}, -3\right\}$

8) $\{4, -2\}$

9) $-12x^5y^5$

10) $3n^{\frac{3}{2}}$

11) $m^{\frac{9}{2}}$

12) $2\sqrt[3]{2}$

13) 10; (5,6)

14) (a) \$88,804 (b) \$89,634

15) $x^2 + y^2 = 49$

16) $(x - 2)^2 + (y - 7)^2 = 121$