Honors Math 2
Quarter 1 Review

Name_____
Period_____Date_____

Simplify the expression with positive exponents.

1. $4^2 \cdot 4^6$	2. $5^2 \cdot 5$
3. $(-8m^4n)^2 \cdot m^3n^5$	4. $-(2x^4)^3(-1.5x^7)$
5. $(3x^5)^3(2x^7)^2$	6. $(-3x^4y^2)^2(2x^7y)^2$
7. $(-20x^3)^2(-x^7)$	8. $24m^2n^{-3}p^{-2}$
9. $-4x^{-1}y^4z^3$	10. $\frac{-2x^0}{5x^{-1}}$
11. $\frac{-4x^4}{8x^{-2}}$	12. $\frac{-6^0}{7x^{-3}}$
13. $\frac{m^{3/4}}{m^{1/8}}$	14. $\frac{x^{1/2}}{x^{1/4}}$
15. $\frac{y^{2/3}}{y^{1/6}}$	16. $\frac{x^{4/5}}{x^{3/10}}$

Rewrite in Radical Form.

17. $5m^{\frac{2}{3}}$	18. $(3x)^{\frac{1}{2}}$
19. $-3m^{\frac{4}{5}}$	20. $(5x)^{\frac{2}{3}}$

Rewrite in Exponential Form.

21. $4\sqrt[3]{m^2}$	22. $\sqrt[3]{x^2}$
23. $\sqrt{3x}$	24. $\left(\sqrt[3]{3x}\right)^2$

Simplify the following. Rationalize the denominator when necessary.

25. $\dfrac{\sqrt{4}}{\sqrt{12}}$	26. $\sqrt{\dfrac{35}{60}}$
27. $3\sqrt{2}\,(\sqrt{5} + \sqrt{2})$	28. $-2\sqrt{3}\,(2\sqrt{3} + 3\sqrt{8})$
29. $7\sqrt{5} - 2\sqrt{20}$	30. $\sqrt{27} + \sqrt{75}$
31. $4\sqrt{x} \cdot 5\sqrt{x}$	32. $\sqrt{5x} \cdot \sqrt{20x}$
33. $\sqrt{48} + \sqrt{12}$	34. $\sqrt{3x} \cdot \sqrt{27x}$

Simplify.

35. $(4m+1)^2$	36. $(3x+9)(2x-5)$
37. $(12x^2+8x-3)-(11x^2-x+5)$	38. $(2n+5)(2n^2-n-7)$
39. $(7n-3n^3)+(16-8n^3+5n^2-n)$	40. $(4x^5+3x^4-5x+1)-(x^3+2x^4-x^5+1)$
41. $\sqrt{-144}$	42. $\sqrt{-56}$
43. $(-14+2i)-(24+26i)$	44. $(26-13i)+(42+8i)$
45. $(4+7i)(2+5i)$	46. $(3-5i)(3+5i)$

Simplify:

47. $\frac{2}{5i}$	48. $\frac{6-5i}{4i}$

Solve the equation for x.

49. $2x^2 - 32 = 8$	50. $3x^2 - 8 = -17$

Use the following complex numbers: $\boldsymbol{z = 3 - 6i}$ and $\boldsymbol{w = -5 + 2i}$

51. $\boldsymbol{\lvert z \rvert}$	52. $\boldsymbol{\lvert w \rvert}$
53. $\boldsymbol{\bar{z}}$	54. $\boldsymbol{\bar{w}}$

Given the line: $\boldsymbol{8x - 12y = 48}$

55. What is the x – intercept?	56. What is the y-intercept?

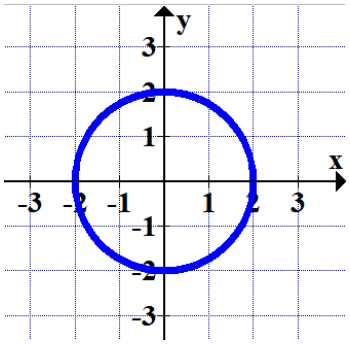
Write an equation that satisfies the given information.

57. Circle: center (4, -3) and radius 3	58. Parabola: vertex (1, 0) and $a = -2$

Match the graph and equation with its correct name.

A. Square root	____1. $y = 2^x$
B. Circle	____2. $x^2 + y^2 = 4$
C. Absolute Value	____3. $y = \|x - 1\| + 2$
D. Cube root	____4. $y = 2\sqrt{x + 3} - 1$
E. Parabola	____5. $y = \sqrt[3]{x + `1} + 2$
F. Line	____6. $y = x^3$
G. Cubic	____7. $y = x$
H. Exponential	____8. $y = -(x + 1)^2 + 4$

1._____



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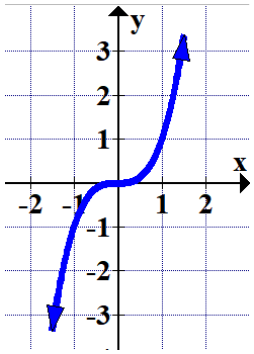

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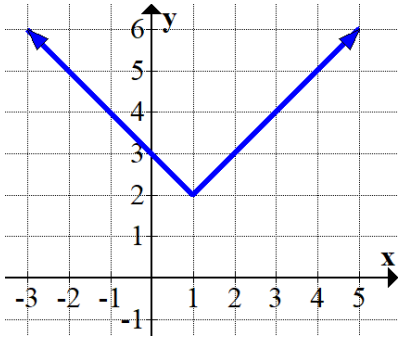

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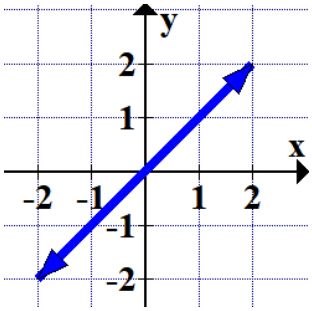

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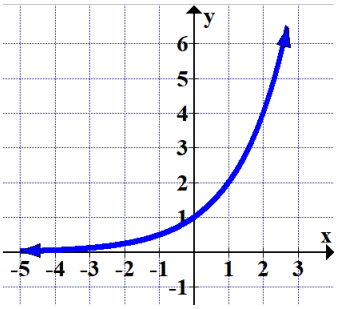

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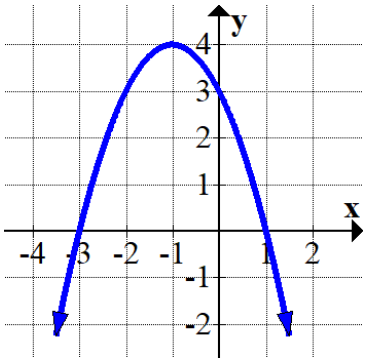

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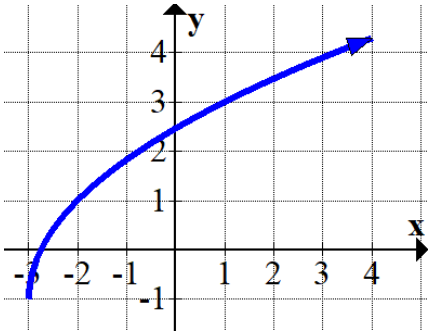

8._____