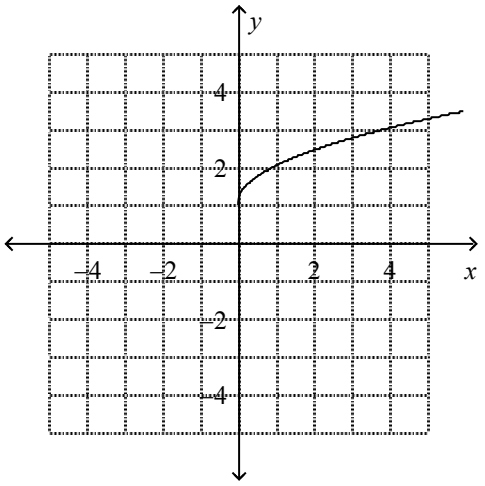
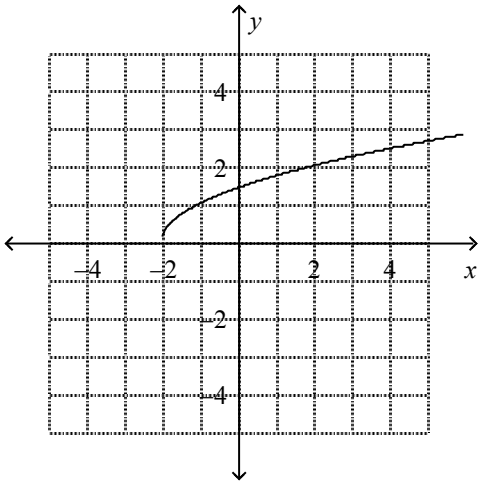
Spring 2011 Final Exam Review Answer Section

1. A
2. $-20x^5 + 8x^4$; quintic binomial
3. quintic trinomial
4. $-4x^2 + 17x - 72$, R 290
5. $x^3 - 9x^2 - 15x + 11$
6. P(-1) = 2
7. x = $\frac{3+i}{2}, \frac{3-i}{2}, -4$
8. $x = -1, \pm 2\sqrt{2}$
9. $x = 5, \pm i\sqrt{7}$
10. $2a^3b^5\sqrt[3]{3a}$
11. $3x^6\sqrt[3]{2x}$
12. $\frac{x^3y^3\sqrt{35y}}{7}$
13. 1.42 in.
14. $4\sqrt{6} + 24$
15. x = 10
16. x = 41
17. $-12 - 7\sqrt{2}$
18. $f(x) = 250(1.17)^x$
19. $y = 5(3)^x$
20. $y = 179\left(\frac{1}{2}\right)^{\frac{1}{83}x}$; 148.957 kg
21. $1,967.23
22. $\log_3 2,187 = 7$
23. $64^{\frac{2}{3}} = 16$
24. $\log_b(v^6q^7)$
25. $\log_6 8$
26. $\log_9 8 + 5\log_9 m$
27. x = –0.046
28. x = 0.07
29. $y = \frac{7wx}{z}$; 40
30. Vert. asymptote x=3, x=6;
    Horizontal asymptote y=0
31. asymptote: $x = -5$ and hole: $x = -4$
32. direct variation; $y = -15x$
33. x + 5 ; $x \neq -3, -6$
34. $\frac{a^2 + a}{a + 5}$, $a \neq -2, 0, -5$
35. $\frac{b-1}{b+8}$
36. $\frac{6k - 37}{(k-7)(k+7)}$
37. $\frac{16}{17}$
38. $\frac{m+1}{(m+4)(m+5)}$
39. d = $-\frac{53}{75}$
40. x = $\frac{13}{3}$
41. $\frac{(x-3)^2}{64} + \frac{(y-4)^2}{25} = 1$
42. $(x-8)^2 + (y-6)^2 = 9$
43. $-24y = x^2$
44. vertex (–5, 3), focus (–5, 6),
    directrix at $y = 0$
45. $\frac{(x-2)^2}{7} + \frac{(y-3)^2}{5} = 1$
    ellipse with center (2, 3),
    foci at $(2 \pm \sqrt{2}, 3)$
46. $\frac{(x+3)^2}{2} - \frac{(y+5)^2}{5} = 1$
    hyperbola with center (–3, –5),
    foci at $(-3 \pm \sqrt{7}, -5)$
47. $h = \frac{0.00252d^{2.27}}{e}$ Write the formula.
    $= \frac{0.00252(90)^{2.27}}{1.4}$ Substitute for d and e.
    ≈ 49.14
    The distance is about 49.14 meters.
48. **a.** –20°C
    b. 342 meters per second
49. $27,323
50. $8y = x^2$
51. 0.26 tons
52. $\frac{1}{7} + \frac{1}{6} = \frac{1}{x}$; 3.23 hours
53. **a.** $(x-4)^2 + (y+5)^2 = 49$
    b. about 44 meters

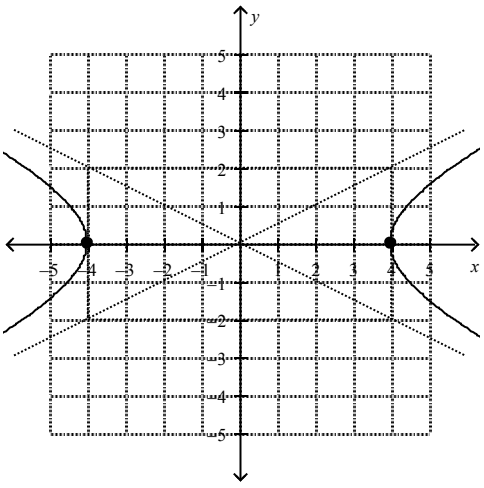
54.



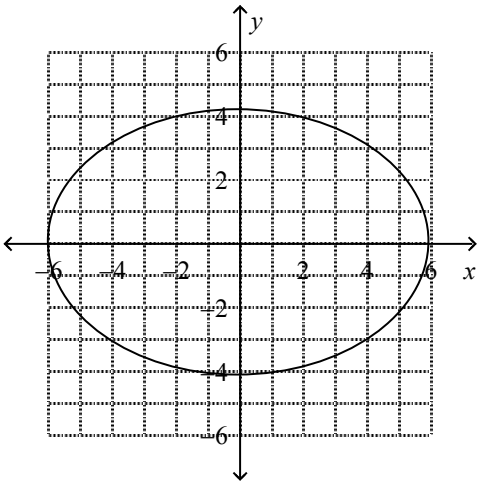
55.



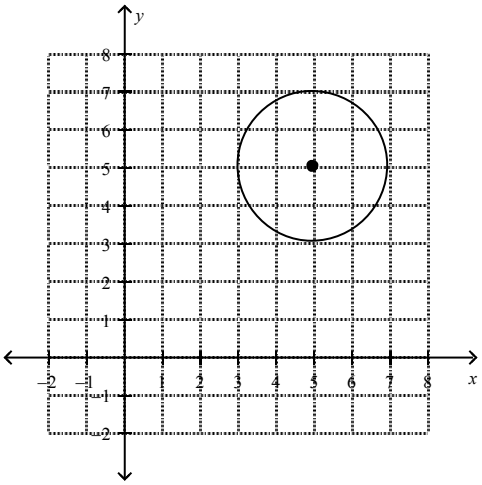
56.



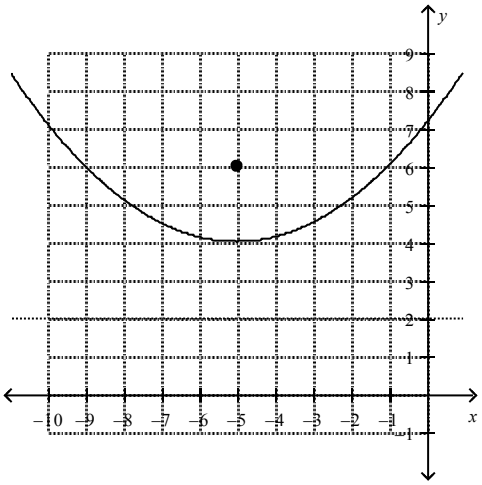
57.



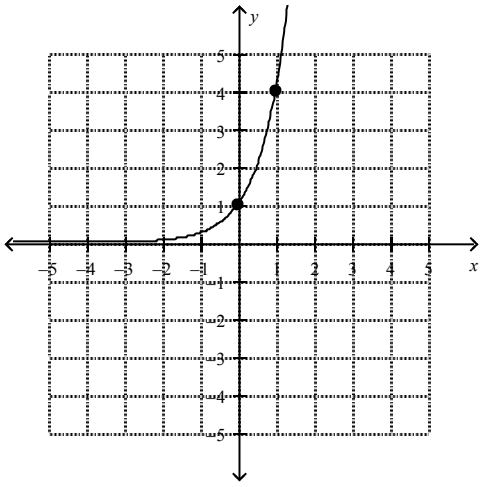
58.



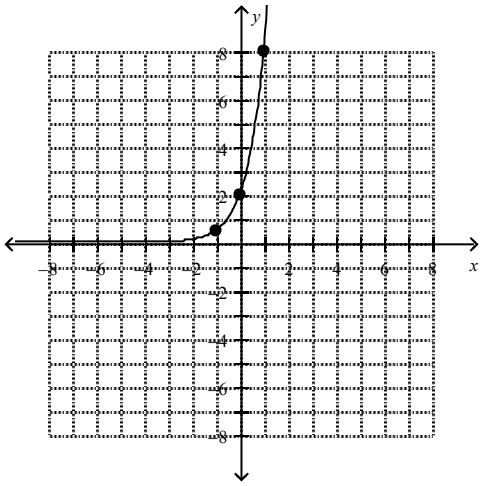
59. vertex (–5, 4), focus (–5, 6), directrix at $y = 2$



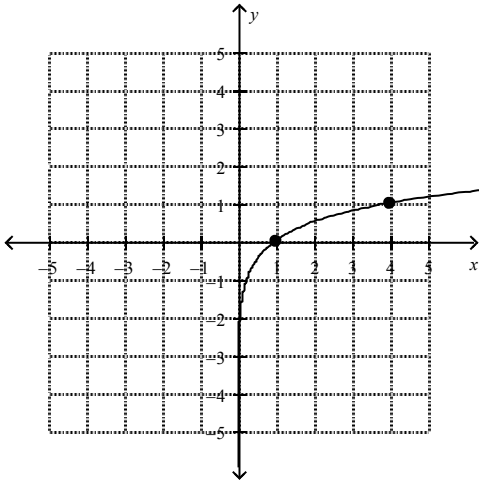
60.



61.



62.



63.