

Spring 2014 Final Exam Review Answer Section

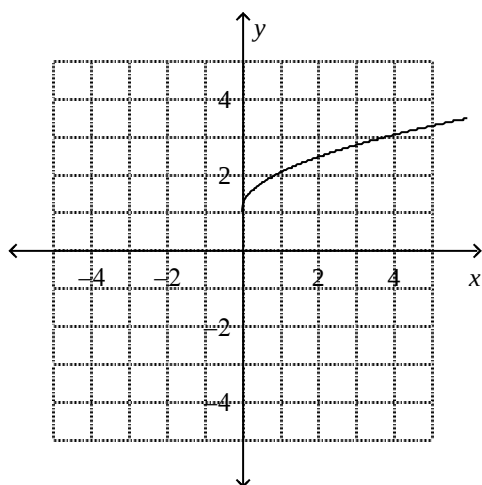
1. A
2. $-20x^5 + 8x^4$; quintic binomial
3. quintic trinomial
4. $-4x^2 + 17x - 72$, R 290
5. $x^3 - 9x^2 - 15x + 11$
6. $P(-1) = 2$
7. $x = \frac{3+i}{2}, \frac{3-i}{2}, -4$
8. $x = -1, \pm 2\sqrt{2}$
9. $(x+5)(x^2 - 5x + 25)$
10. $2a^3b^5\sqrt[3]{3a}$
11. $3x^6\sqrt[3]{2x}$
12. $\frac{x^3y^3\sqrt{35y}}{7}$
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. $\log_8(p^6q^7)$
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.
$$h = \frac{0.00252d^{2.27}}{e}$$

$$= \frac{0.00252(90)^{2.27}}{1.4}$$

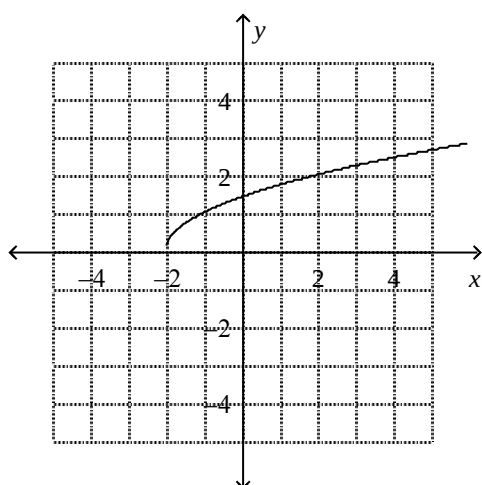
$$\approx 49.14$$

Write the formula.
Substitute for d and e .
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

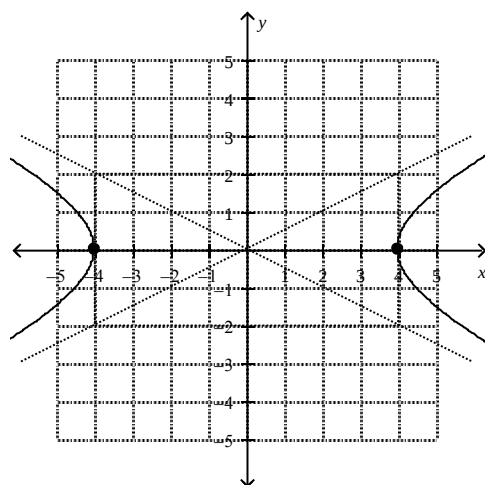
54.



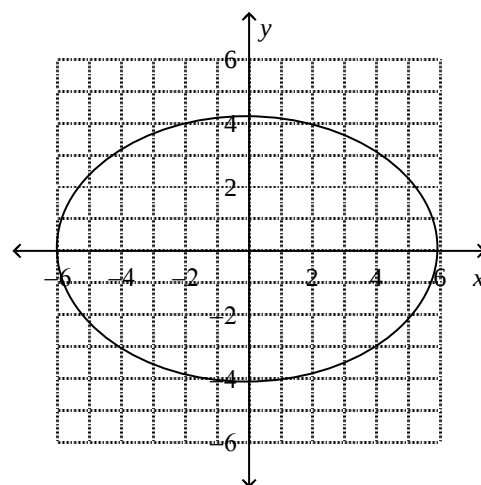
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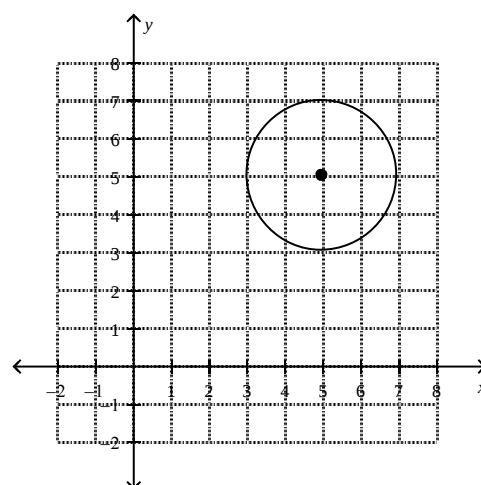
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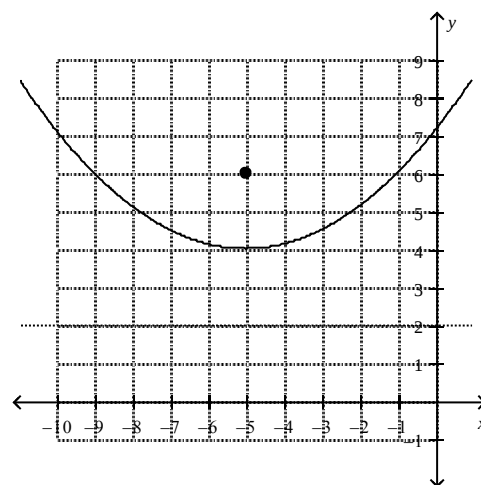
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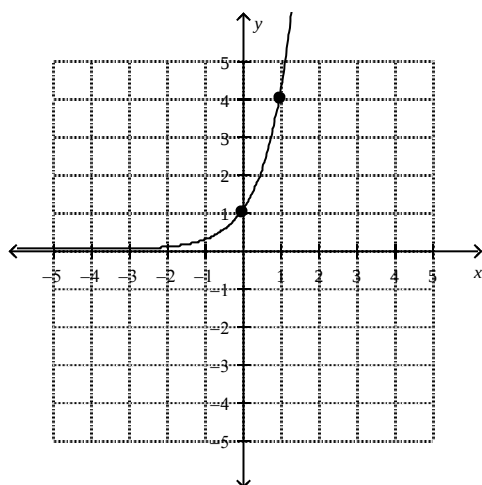
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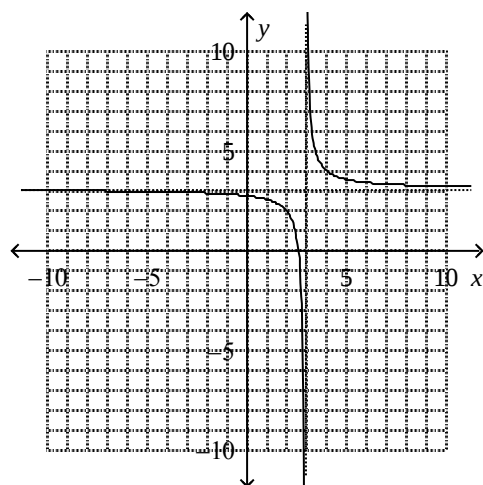
59. vertex $(-5, 4)$, focus $(-5, 6)$,
directrix at $y = 2$



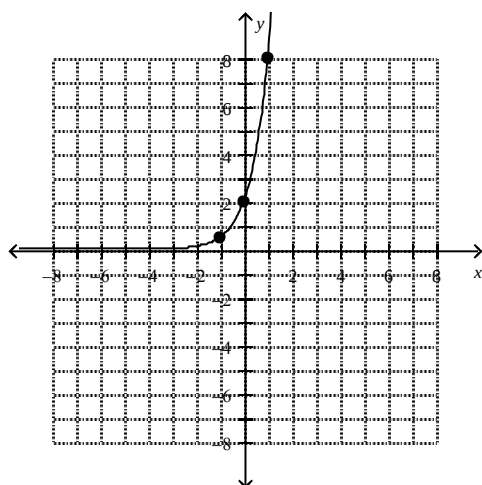
60.



63.



61.



62.

