Answer Key

Math 1031
Spring 2003 Final Exam

Multiple Choice Problems

1. B
2. A
3. C
4. C
5. C
6. A
7. B
8. C
9. B
10. C
11. A
12. D
13. A
14. B
15. C
16. D
17. A
18. B
19. C
20. A

Written Answer Problems

21. $-\$(32/52) \approx -61.5$ cents

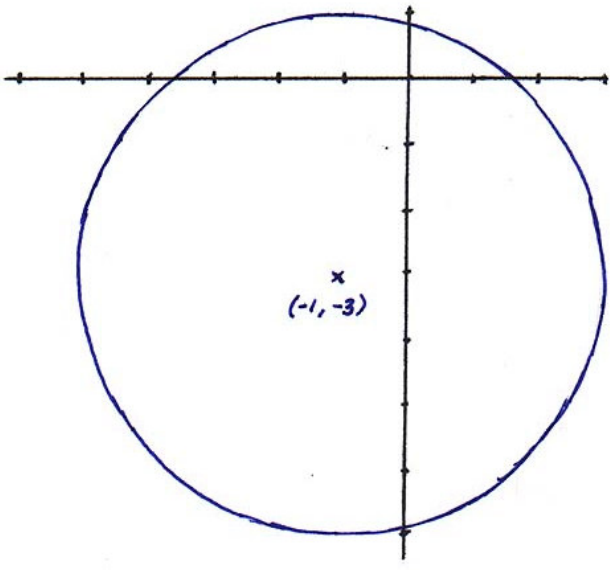
22.
- a) $(x+1)^2 + (y+3)^2 = 16$
- b) radius: 4
- c) center: $(-1, -3)$
- d) see below

23.
- a) $C = 24{,}000 + 16t$
- b) $R = 30t$
- c) $P = R - C = 14t - 24{,}000$
- d) $(12000/7) \approx 1714$ hours

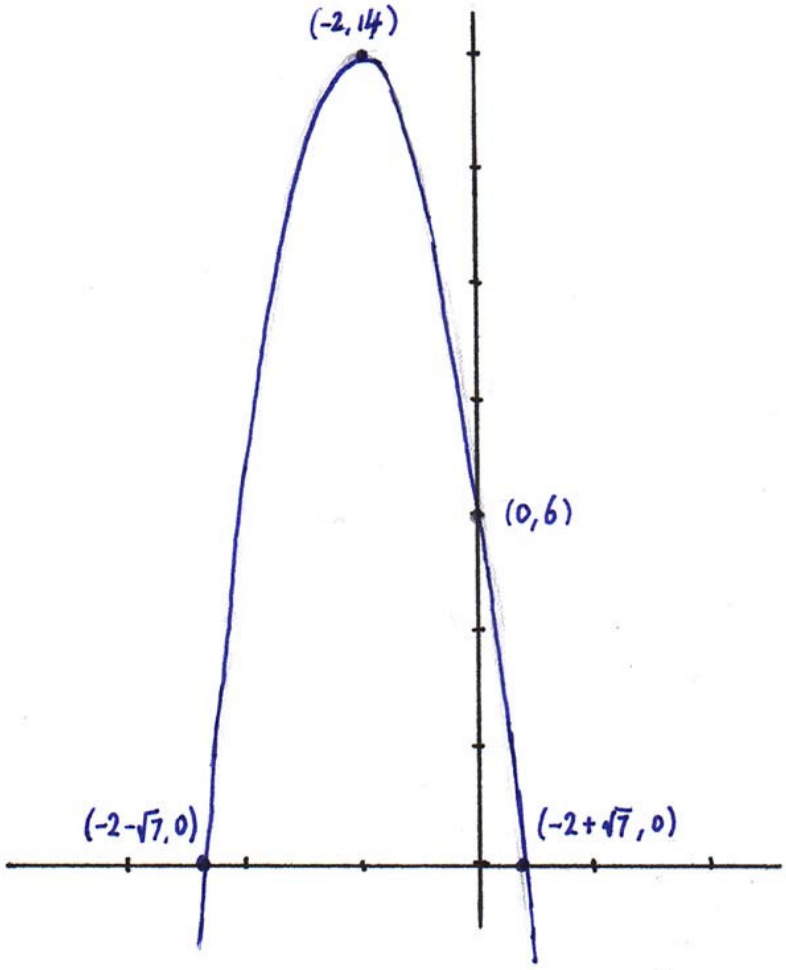
24.
- a) $(-1/2)(y - 14) = (x+2)^2$ b) see below
- c) vertex: $(-2, 14)$ d) y-intercept: $(0, 6)$
- e) x-intercepts: $(-2 \pm \sqrt{7}, 0)$
- f) domain: all reals g) range: $(-\infty, 14]$
- h) interval of increase: $(-\infty, -2)$
- i) interval of decrease: $(-2, \infty)$

25.
- a) see below
- b) x-intercept: $(e^5 - 4, 0)$ c) domain: $(-4, \infty)$
- d) Since f(x) is one-to-one and onto, it has an inverse: $f^{-1}(x) = e^{(5-x)} - 4$

Graph for 22(d):



Graph for 24(b):



Graph for 25(a):