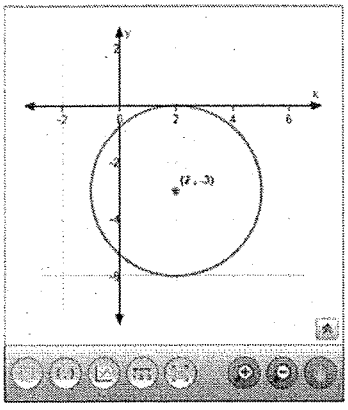
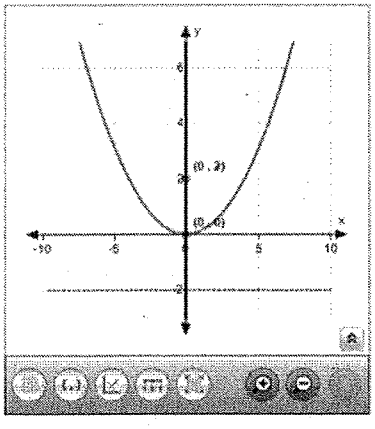
Precalculus Summer Packet Answer Key

1. $10i$
2. 6
3. -7
4. $2xy^2\sqrt{2}$
5. $8+9i$
6. $2+6i$
7. 13
8. $4+6i\sqrt{5}$
9. $4i$
10. $-3i$
11. $-27+8i$
12. $\frac{3+4i}{10}$
13. $-2\sqrt{2}$
14. $18\sqrt{2}$
15. -2
16. $\frac{3\sqrt{5}}{5}$
17. $-9-4\sqrt{5}$
18. $(t+3)(t-7)$
19. $(2x-1)(4x^2+2x+1)$
20. $(3x+1)(2x-3)$
21. $(x+2)(x-2)(x-2)$
22. $(x^2+9)(x+3)(x-3)$
23. $(x+y)^2$
24. $(x^2+3)^2$
25. $2(x^4-3x^2+4)$
26. $3(y-5)(y+5)$
27. $10x^7$
28. $4c^6$
29. t^n
30. 320
31. $x=1,-3$
32. $x=-2,4$
33. $x=-3,-1$
34. $x=0,16$
35. $-1\pm i$
36. $x=\frac{-3\pm\sqrt{29}}{2}$
37. $x=-4\pm\sqrt{13}$
38. $w=1\pm i\sqrt{3}$
39. 5
40. $2\sqrt{2}$
41. 8
42. $2x$
43. $x\geq -2$
44. $y=\pm\sqrt{x+4}$
45. No, it is not a function.
46. $\frac{x-5}{x+2}$
47. 1
48. $\frac{2}{3x}$
49. $\frac{x(x+9)}{(x+3)(x-3)}$
50. $\frac{3x+8}{2x^2}$
51. $y=-\frac{6}{7}x+\frac{10}{7}$
52. $y=28x+30$
53. $(-1,-1)$
54. $\left(\frac{1}{2},0\right)$
55. $c=10ft$
56. $a=6\sqrt{2}ft$
57. $x=3ft;$ $y=3\sqrt{2}ft$
58. $x=8in;$ $y=4\sqrt{3}in$
59. $x=2\sqrt{3}cm;$ $y=6cm$
60. $\frac{12}{13}$
61. $\frac{5}{13}$
62. $\frac{12}{5}$
63. $\frac{12}{13}$
64. $\frac{12}{13}$
65. $\frac{5}{12}$
66. $x=11.276;$ $y=4.104$
67. $x=57.265°;$ $y=32.735°$
68. $\frac{1}{2}$
69. -2
70. -2
71. 2
72. $x=-1,2$
73. $x<-10$ *or* $x>2$
74. $-\frac{2}{3}<x<\frac{10}{3}$
75. $y=\frac{4}{5}x-\frac{22}{5}$
76. $y=\frac{3}{2}x-\frac{5}{2}$
77. $y=4$
78. $y=-\frac{2}{5}x-\frac{11}{5}$
79. $y=\frac{5}{2}x-8$
80. $d=\sqrt{41};$ $mdpt(-\frac{3}{2},-1)$
81. $d=3\sqrt{5};$ $mdpt=(6.5,-9)$

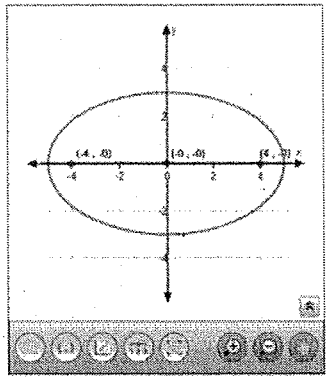
82. Circle with center at (2, -3) and radius = 3.



83. Parabola with vertex at the origin, focus at (0, 2), and directrix of y = -2.



84. Ellipse with center at the origin, vertices at (±5, 0), co-vertices at (0, ±3), and foci at (±4, 0).



85. Hyperbola with center at the origin, vertices at (0, ±4), foci at $(0, \pm\sqrt{20})$, and asymptotes of y = ±2x.