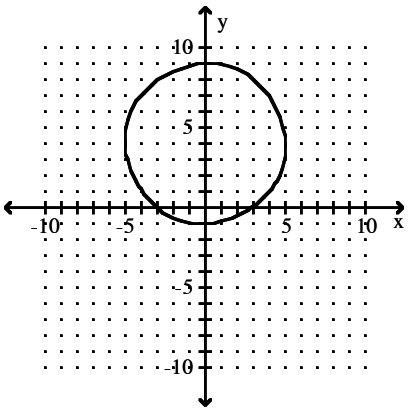
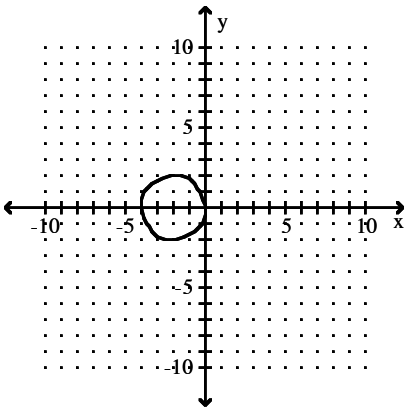
Answer Key
Testname: M101PEC06

1) C
2) B
3) B
4) A
5) $(x-2)^2+y^2=1$
6) $\left(x+\frac{4}{3}\right)^2+\left(y+\frac{9}{10}\right)^2=\frac{25}{36}$
7) $(x-25)^2+(y-24)^2=625$
8)



9)



10) $(-4, 0)$, $r=8$
11) $\left(\frac{1}{2}, -\frac{1}{2}\right)$, $r=\frac{\sqrt{26}}{6}$
12) $(-2, 9)$ opens downward
13) $(5, -3)$ opens right
14) $(0, -9)$, $y=9$, y–axis
15) $\left(\frac{1}{24}, 0\right)$, $x=-\frac{1}{24}$, x–axis
16) $y=\frac{1}{16}x^2$
17) $x=-\frac{1}{5}y^2$

18) $y = -\frac{2}{3}x^2$

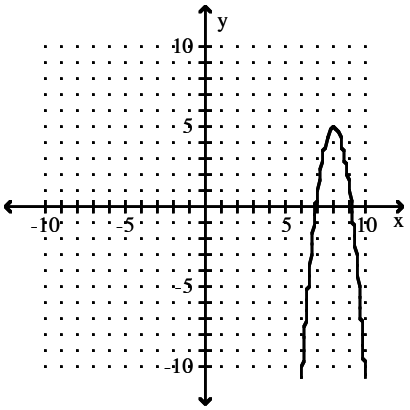
19) $(x - 8) = \frac{(y + 6)^2}{12}$

20) $20(y + 3) = (x - 3)^2$

21) vertex: (4, 3);
axis: $y = 3$;
domain: $[4, \infty)$
range: $(-\infty, \infty)$;

22) vertex: (–3, 2);
axis: $x = -3$;
domain: $(-\infty, \infty)$;
range: $[2, \infty)$

23)



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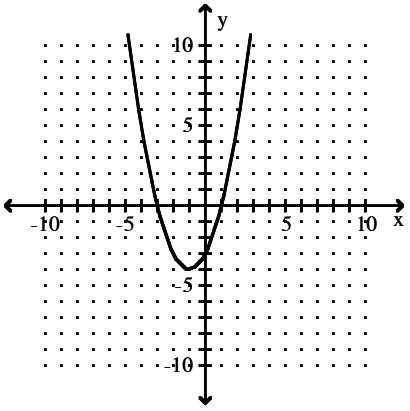

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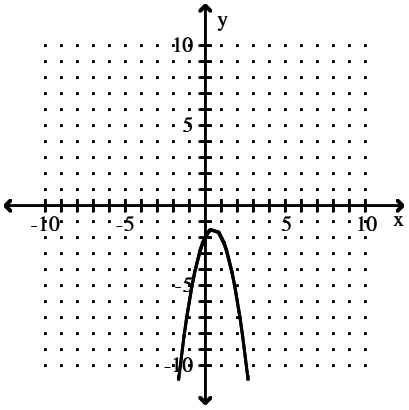

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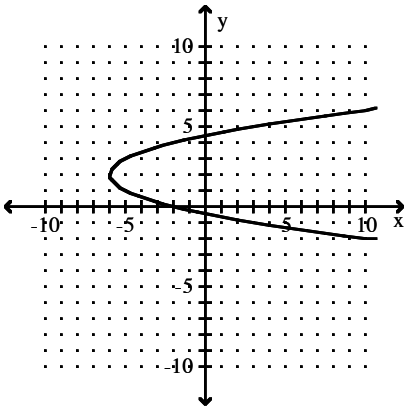

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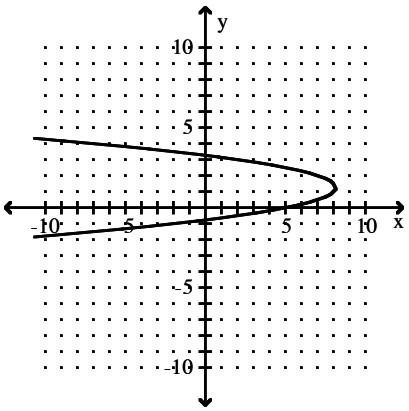
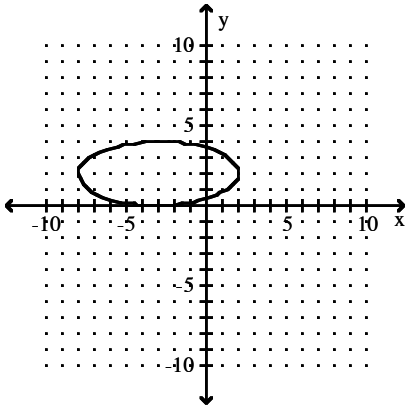


28) D
29) C
30) D
31) A

32)



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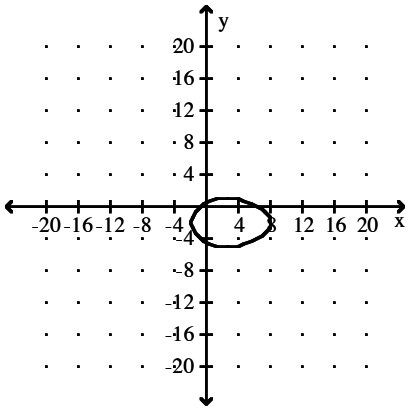


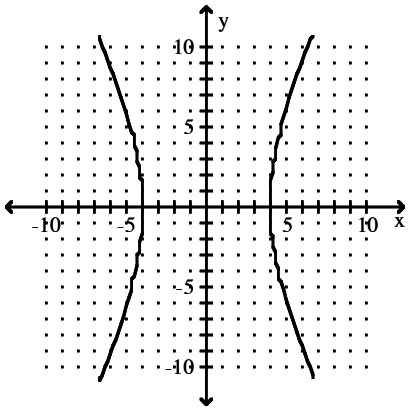
34) $\frac{x^2}{49} + \frac{y^2}{25} = 1$

35) $\frac{x^2}{56} + \frac{y^2}{81} = 1$

36) $\frac{(x-1)^2}{25} + \frac{(y+4)^2}{16} = 1$

37) $\frac{(y-2)^2}{49} + \frac{(x-5)^2}{16} = 1$

38)



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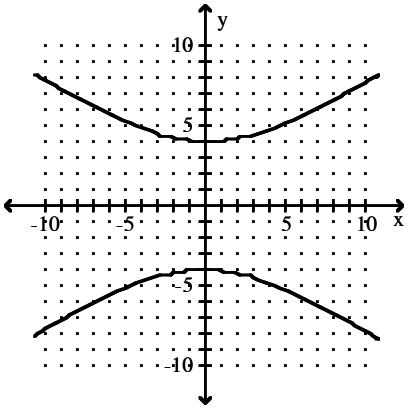

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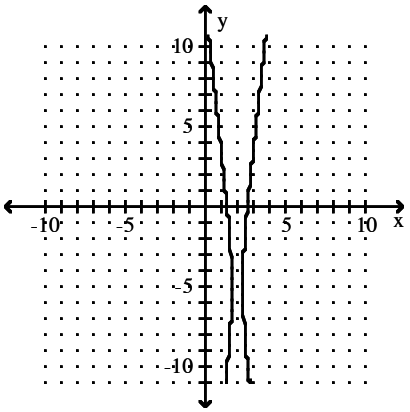


41) $\frac{y^2}{49} - \frac{x^2}{15} = 1$

42) $\frac{x^2}{9} - \frac{y^2}{16} = 1$

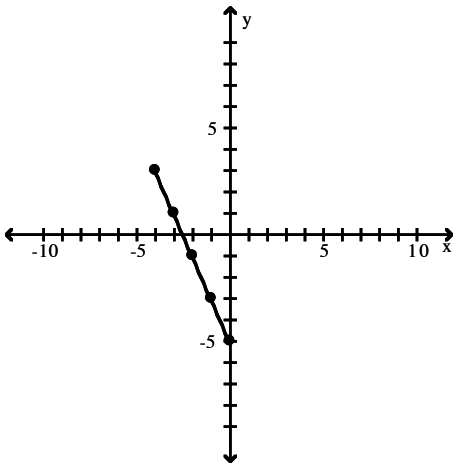
43) $\frac{(x-1)^2}{5} - \frac{(y-3)^2}{6} = 1$

44) $\frac{(x-\frac{7}{2})^2}{1} + \frac{(y+\frac{2}{2})^2}{\frac{3}{4}} = 1$

45) 24.5 m
46) Domain: [–4, 4]; Range: [–2, 2]
47) Horizontal: y = –7; Vertical: x = 4
48) Circle
49) Hyperbola
50) Parabola
51) Circle
52) The graph is an ellipse with foci on the x–axis.
53) The graph is a circle with center at (0, 0) .
54) The graph is a circle with center (–7, 9)

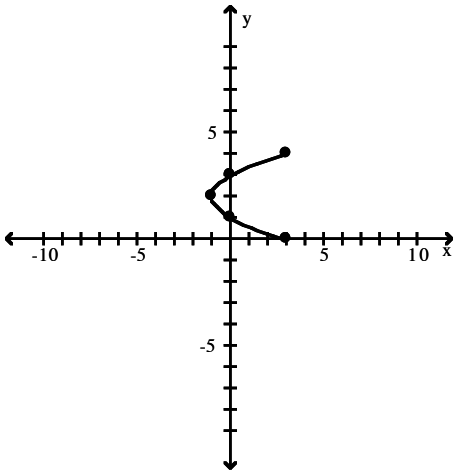
55) The graph is a parabola opening downward.
56) The graph is the point (4, 8).
57) $\frac{\sqrt{17}}{3}$
58) $\frac{\sqrt{3}}{2}$
59) $\frac{\sqrt{17}}{4}$
60) $\frac{x^2}{16} + \frac{y^2}{12} = 1$
61) $\frac{x^2}{16} - \frac{y^2}{20} = 1$
62) e = $\frac{\sqrt{21}}{5}$
63) 0.156
64) The equation is the graph of a hyperbola.
65) True
66) True
67) True
68)

t	x	y
–2	0	–5
–1	–1	–3
0	–2	–1
1	–3	1
2	–4	3



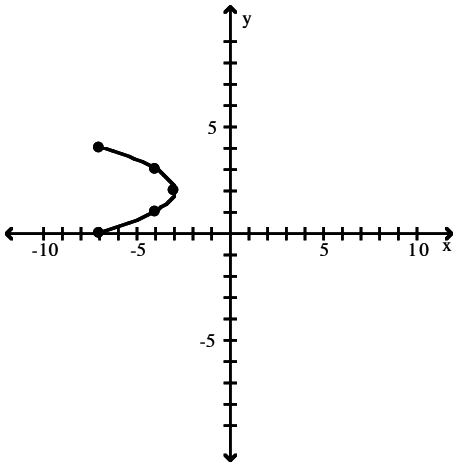
69)

t	x	y
–2	3	4
–1	0	3
0	–1	2
1	0	1
2	3	0



70)

t	x	y
–2	–7	0
–1	–4	1
0	–3	2
1	–4	3
2	–7	4



71) $y = 2x^2 + 5$, x in $(0, \infty)$

72) $y = x^2 + 6x + 14$

73) $y = 7\left(\frac{x}{5}\right)^{2/3}$

74) Answers will vary. Two possible representations are as follows:

$x = \frac{t-7}{3}t$, $y = \sqrt{t}$, t in $[0, \infty)$

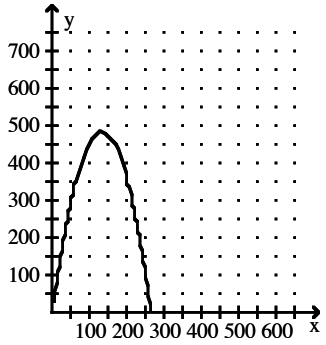
$x = \frac{1}{3}t$, $y = \sqrt{t+7}$, t in $[7, \infty)$

75) (a) 2.2 seconds
(b) 78 feet

76) (a) 9.4 seconds
(b) 2436 feet

77) (a) 14.9 seconds
(b) 3545 feet

78)



$y = \frac{22}{3}x - \frac{1}{36}x^2$

79) True

80) False