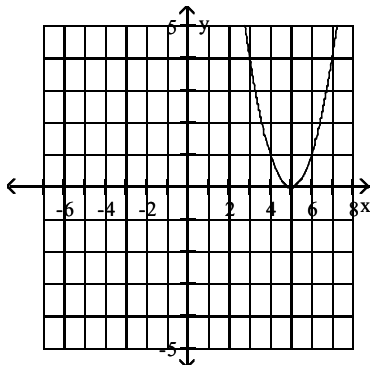


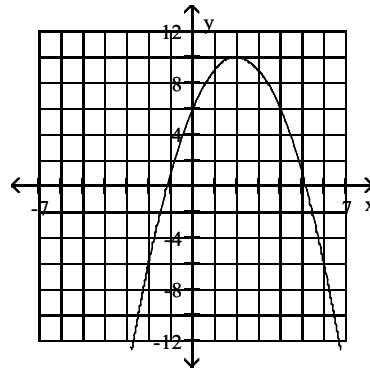
Answer Key

Testname: HW2

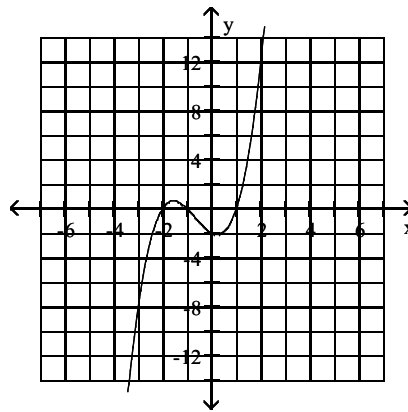
- 1) Relative minimum at (2, 3)
- 2) Relative maximum at (-10, 81)
- 3) Relative maximum at $\left(-\frac{1}{6}, -\frac{41}{6}\right)$
- 4) Relative minimum at (6, -1.3)
- 5) Relative maximum at (0, 1); relative minimum at (2, -3)
- 6) Relative maximum at $\left(-\frac{3}{2}, \frac{79}{8}\right)$; relative minimum at $\left(3, -\frac{41}{2}\right)$
- 7) Relative minimum at (0, 32)
- 8) Relative maximum at $\left(\frac{1}{4}, \frac{1}{256}\right)$
- 9) Relative maximum at (0, -4)
- 10) Relative minimum at (-1, -4); relative maximum at (1, 4)
- 11) No relative extrema exist
- 12) Relative minimum at (-6, 6)
- 13) Relative minimum: (4, 1)
- 14) Relative maximum: (0, -1); relative minima: (3, -82), (-3, -82)
- 15) Relative maximum: (-9, 49)
- 16) No relative extrema exist
- 17) Relative maximum: $\left(\frac{3}{16}, \frac{27}{16384}\right)$
- 18) Relative minimum: (-3, 0)
- 19) Relative minimum: (-2, -64), relative maximum: (2, 64)
- 20) (0, 11), (250, 62,511), (500, 11)
- 21) (0, 98.6), (7, 103.5), (14, 98.6)
- 22) (150, 51.4)
- 23)



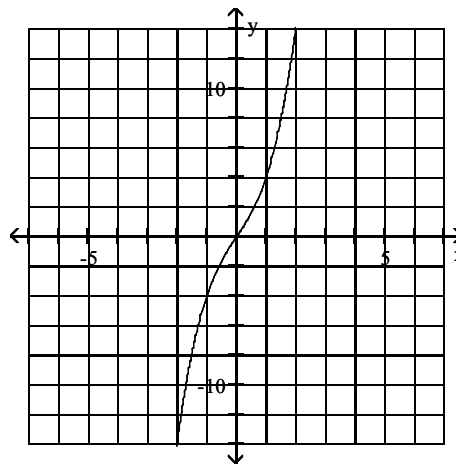
24)



25)



26)



27) Answers will vary.

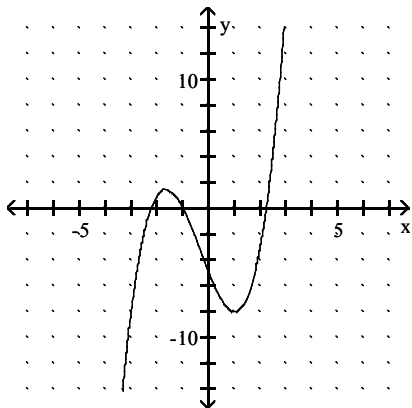
28) Answers will vary.

29) Answers will vary.

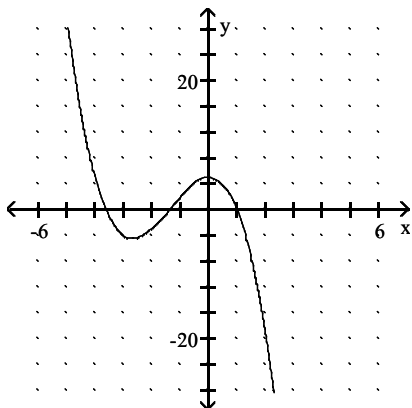
Answer Key

Testname: HW2

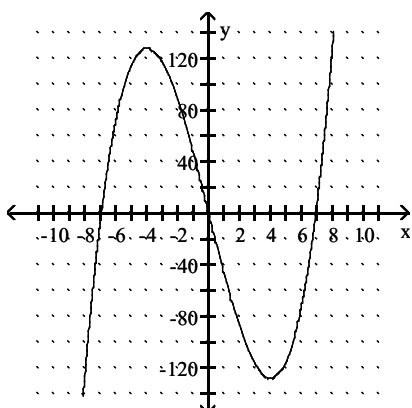
30)



31)



32)



33) (0, 5)

34) (0, 3)

35) (0, 0)

36) (3, 4)

37) (0, 10), (2, 6)

38) Increasing on $(-\infty, -2]$, decreasing on $[-2, \infty)$

39) Increasing on $(-\infty, -\frac{1}{4}]$, decreasing on $[-\frac{1}{4}, \infty)$

40) Increasing on $(-\infty, \infty)$

41) Decreasing on $(-\infty, -3]$ and $[0, 3]$, increasing on $[-3, 0]$ and $[3, \infty)$

42) Concave up for all x

43) Concave up on $(0, \infty)$, concave down on $(-\infty, 0)$

44) Concave up on $(-\infty, 0)$, concave down on $(0, \infty)$

45) Concave up on $(-1, \infty)$, concave down on $(-\infty, -1)$

46) Answers will vary.

47) Answers will vary.

48) Answers will vary.

49) Answers will vary.

50) \$2,790,000

51) \$863,333

52) (4.67, 218.26)

53) (10, 13,000)

54) Absolute maximum: -21, absolute minimum: -21

55) Absolute maximum: 14, absolute minimum: -4

56) Absolute maximum: $\frac{256}{675}$, absolute minimum: -525

57) Absolute maximum: $\frac{416}{3}$, absolute minimum: $-\frac{416}{3}$

58) Absolute maximum: $\frac{347}{27}$, absolute minimum: -908

59) No absolute maximum; absolute minimum: 3

60) 105 ft by 105 ft; 11,025 ft²

61) 41.5 ft x 41.5 ft

62) 9.11 ft x 9.11 ft

63) 17 ft by 68 ft

64) 3.2 ft

65) 56 units

66) 3100 units

67) 550

68) \$187

69) 32

70) 2639 copies

71) \$0.56

72) \$5.08

73) \$0.50

74) \$55

75) \$149

76) \$5667

77) 74

78) -157

79) 600 mm³