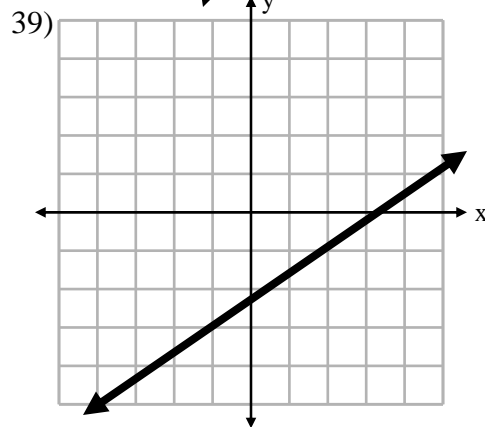
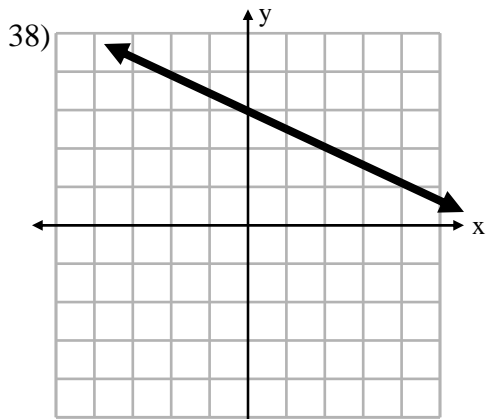
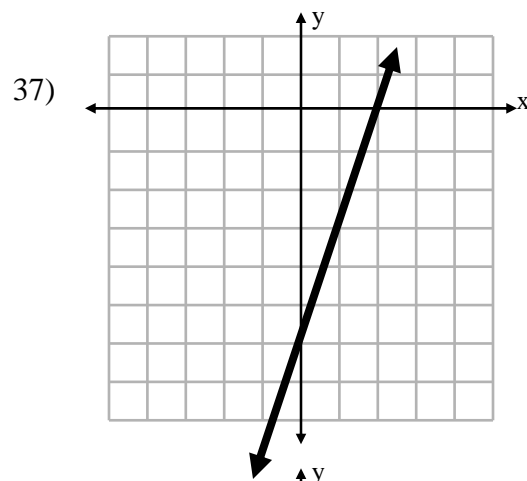
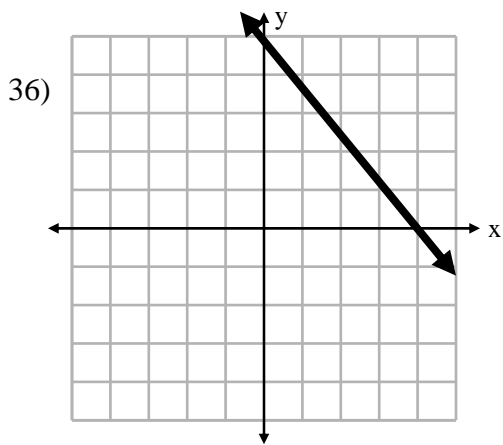


## Math 0200 Final Exam Review Solutions

- 1) 5
- 2) 4
- 3) -19
- 4)  $\frac{x^3}{16}$
- 5)  $x^9$
- 6) 29
- 7)  $x = 2$
- 8)  $x = 7$
- 9)  $x = -4$
- 10) The number is 43.
- 11) The lengths of the pieces are 15 inches, 32 inches and 40 inches.
- 12) The architect worked 27 hours.
- 13) They should enroll 2024 students.
- 14) The student needs 92% or better on test 4 to earn a B in the course.
- 15) It is 225 miles from the starting point.
- 16) 0.00003113
- 17) 1,201,000,000
- 18)  $8.7 \times 10^7$
- 19)  $1.7 \times 10^{-5}$
- 20)  $-2x^2y + 5xy + 4xy^2 + 10$
- 21)  $-x - 17xy + 32$
- 22)  $21a^6b^3 + 3a^4b^3 - 12a^4b$
- 23)  $-6y^2 - 10y + 4$
- 24)  $6y^5 - 9y^4 + 33y^3$
- 25)  $x^2 - 81$
- 26)  $(m + 6)^2$
- 27) Prime
- 28)  $(2v - 3)(v + 1)$
- 29)  $(p - 10)(p + 10)$
- 30)  $(t + 5)(t - 3)$
- 31)  $2x(x + 3)(x + 1)$
- 32) 3
- 33) 1
- 34)  $w = \frac{P - 2l}{2}$
- 35)  $t = \frac{S - P}{Pr}$



$m = -1/2$  y-intercept (3, 0)

40)  $y = 3x + 4$

41)  $m = 2$

42)  $x = -7$

43)  $y = -\frac{1}{2}x - 1$

44) 21

45) 3

46) 1

47)  $2\sqrt{2}$

48)  $3a^3b^3\sqrt{2a}$

49)  $6\sqrt{2}$

50)  $2\sqrt{10}$

51)  $\sqrt{34}$

52)  $10\sqrt{7}$

53) The dimensions of the garden are 10 feet by 14 feet.

54)  $t = \pm \frac{1}{2}$

55)  $x = \frac{5}{3}, x = -2$

56)  $x = \frac{1}{4}, x = -\frac{1}{2}$

57) The height of the sail is 21 feet.

58) Perimeter = 47 in and Area =  $87.5 \text{ in}^2$

59)  $m\angle 1 = 45^\circ, m\angle 3 = 45^\circ, m\angle 4 = 135^\circ$

60)  $m\angle A = 150^\circ$  and  $m\angle B = 30^\circ$

61) isosceles triangle,

$$m\angle 1 = 65^\circ$$

$$m\angle 2 = 115^\circ$$

$$m\angle 3 = 65^\circ$$

$$m\angle 4 = 50^\circ$$

$$m\angle 5 = 65^\circ$$

62)  $m\angle A = 80^\circ, m\angle B = 80^\circ$

63)  $m\angle A = 40^\circ, m\angle B = 35^\circ, m\angle C = 105^\circ$

64) a. false, b. true, c. true

65)  $\angle A \cong \angle M, \angle B \cong \angle O, \angle C \cong \angle P$  are congruent angles and

$$\frac{AB}{MO} = \frac{BC}{OP} = \frac{AC}{MP} \text{ are proportional sides}$$

66) 6

67) The tree is 120 feet tall.

68)

Polygon	Number of sides of polygon
hexagon	6
triangle	3
octagon	8
quadrilateral	4
pentagon	5

69) 20 diagonals

70)  $m\angle A = 110^\circ, m\angle B = 70^\circ, m\angle BCD = 110^\circ, m\angle D = 70^\circ$

71)  $x = 2$

72)  $CA = 6; BC = 2\sqrt{11}; AB = 17$

73) The ladder will reach 12 feet up the wall.

74)  $\{y \mid y > -150\}$

75)  $\left\{x \mid x \geq -\frac{8}{7}\right\}$

76) The  $m\angle 1 = 35^\circ$  since it is supplementary to  $145^\circ$ .  $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$  where  $\angle 2 \cong \angle 3$  because it's to be an isosceles triangle. Let  $x = m\angle 2 = m\angle 3$  then

$$35 + x + x = 180$$

$$2x = 145$$

$$x = 72.5$$

$$\text{Thus, } x = 72.5^\circ$$

77) Since  $ABCD$  is a parallelogram, consecutive angles, ( $\angle BAD$  and  $\angle CDA$ ) are supplementary, thus  $m\angle BAC + m\angle CAD + m\angle CDA = 180^\circ$ . Let  $x = m\angle CAD$  then  $25 + x + 110 = 180$ , so  $m\angle CAD = 45^\circ$ .

78) Since  $ABCD$  is a parallelogram,  $\overline{AB} \parallel \overline{CD}$ .  $\overline{AC}$  would be a transversal intersecting the parallel lines.  $\angle ACD$  and  $\angle CAB$  are alternate interior angles and are congruent. Since  $m\angle BAC = 25^\circ$  then  $m\angle ACD = 25^\circ$

79)  $C = 10\pi$  cm and  $A = 25\pi$  cm<sup>2</sup>

80)  $\frac{4}{x}$

81)  $x = 2$ , variable restrictions  $x \neq -5$  or  $x \neq 0$