

JEFFERSON MATH PROJECT

REGENTS BY TYPE

The NY Integrated Algebra Regents Exams
Fall 2007-January 2010
(Answer Key)

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Dear Sir

I have to acknolege the receipt of your favor of May 14. in which you mention that you have finished the 6. first books of Euclid, plane trigonometry, surveying & algebra and ask whether I think a further pursuit of that branch of science would be useful to you. there are some propositions in the latter books of Euclid, & some of Archimedes, which are useful, & I have no doubt you have been made acquainted with them. trigonometry, so far as this, is most valuable to every man, there is scarcely a day in which he will not resort to it for some of the purposes of common life. the science of calculation also is indispensable as far as the extraction of the square & cube roots; Algebra as far as the quadratic equation & the use of logarithms are often of value in ordinary cases: but all beyond these is but a luxury; a delicious luxury indeed; but not to be indulged in by one who is to have a profession to follow for his subsistence. in this light I view the conic sections, curves of the higher orders, perhaps even spherical trigonometry, Algebraical operations beyond the 2d dimension, and fluxions.

Letter from Thomas Jefferson to William G. Munford, Monticello, June 18, 1799.

Integrated Algebra Multiple Choice Regents Exam Questions

Answer Section

- 1 ANS: 3 REF: 060919ia STA: A.G.3 TOP: Defining Functions
 2 ANS: 1 REF: 011001ia STA: A.S.6 TOP: Box-and-Whisker Plots
 3 ANS: 2

$$\frac{9x^4 - 27x^6}{3x^3} = \frac{9x^4(1 - 3x^2)}{3x^3} = 3x(1 - 3x^2)$$

- REF: fall0718ia STA: A.A.14 TOP: Rational Expressions
 4 ANS: 2 REF: 011022ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares
 5 ANS: 4

$$P(G \text{ or } W) = \frac{4}{8}, P(G \text{ or } B) = \frac{3}{8}, P(Y \text{ or } B) = \frac{4}{8}, P(Y \text{ or } G) = \frac{5}{8}$$

- REF: 060802ia STA: A.S.22 TOP: Theoretical Probability
 6 ANS: 1

$$x^2 + 7x + 10 = 0$$

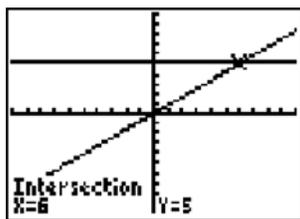
$$(x + 5)(x + 2) = 0$$

$$x = -5 \text{ or } -2$$

- REF: 080918ia STA: A.A.15 TOP: Undefined Rationals
 7 ANS: 2

$$R = 0.5^{d-1}$$

- REF: 011006ia STA: A.A.9 TOP: Exponential Functions
 8 ANS: 1 REF: 011004ia STA: A.A.31 TOP: Set Theory
 9 ANS: 1



$$\frac{(2x \times 6) + (3 \times x)}{3 \times 6} = 5$$

$$\frac{12x + 3x}{18} = 5$$

$$15x = 90$$

$$x = 6$$

- REF: 060907ia STA: A.A.25 TOP: Solving Equations with Fractional Expressions

10 ANS: 3
 $(3-1) \times 2 \times 3 = 12$

REF: 080905ia STA: A.N.7 TOP: Conditional Probability

11 ANS: 2 REF: 011015ia STA: A.G.10
 TOP: Identifying the Vertex of a Quadratic Given Graph

12 ANS: 2
 $\sin A = \frac{8}{12}$
 $A \approx 42$

REF: 060816ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

13 ANS: 1
 To determine student interest, survey the widest range of students.

REF: 060803ia STA: A.S.3 TOP: Analysis of Data

14 ANS: 2
 $P = 2l + 2w$
 $P - 2l = 2w$
 $\frac{P - 2l}{2} = w$

REF: 010911ia STA: A.A.23 TOP: Transforming Formulas

15 ANS: 3
 The other situations are quantitative.

REF: 060819ia STA: A.S.1 TOP: Analysis of Data

16 ANS: 2
 $s + o = 126$. $s + 2s = 126$
 $o = 2s$ $s = 42$

REF: 080811ia STA: A.A.7 TOP: Writing Linear Systems

17 ANS: 4
 $A = lw = (3w - 7)(w) = 3w^2 - 7w$

REF: 010924ia STA: A.A.1 TOP: Geometric Applications of Quadratics

18 ANS: 2
 The events are not mutually exclusive: $P(\text{prime}) = \frac{3}{6}$, $P(\text{even}) = \frac{3}{6}$, $P(\text{prime AND even}) = \frac{1}{6}$
 $P(\text{prime OR even}) = \frac{3}{6} + \frac{3}{6} - \frac{1}{6} = \frac{5}{6}$

REF: 080830ia STA: A.S.23 TOP: Probability of Events Not Mutually Exclusive

19 ANS: 1

$$\frac{4}{3}x + 5 < 17$$

$$\frac{4}{3}x < 12$$

$$4x < 36$$

$$x < 9$$

REF: 060914ia STA: A.A.21 TOP: Interpreting Solutions

20 ANS: 2

$$\frac{2}{3x} + \frac{4}{3x} = \frac{9x + 8x}{6x^2} = \frac{17x}{6x^2} = \frac{17}{6x}$$

REF: 080917ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

21 ANS: 2 REF: 010925ia STA: A.A.15 TOP: Undefined Rationals

22 ANS: 3

$$x^2 - 6x = 0$$

$$x(x - 6) = 0$$

$$x = 0 \quad x = 6$$

REF: 080921ia STA: A.A.27 TOP: Solving Quadratics by Factoring

23 ANS: 3

The other situations are quantitative.

REF: 060905ia STA: A.S.1 TOP: Analysis of Data

24 ANS: 1

$$4y - 2x = 0$$

$$4(-1) - 2(-2) = 0$$

$$-4 + 4 = 0$$

REF: 011021ia STA: A.A.39 TOP: Identifying Points on a Line

25 ANS: 2 REF: 011023ia STA: A.A.40 TOP: Systems of Linear Inequalities

26 ANS: 1

Everyone eats, can shop in malls and wear clothes. People who work in a sporting goods store probably watch more sports television than most.

REF: 010923ia STA: A.S.3 TOP: Analysis of Data

27 ANS: 4

$$y = mx + b$$

$$-1 = (2)(3) + b$$

$$b = -7$$

REF: 080927ia STA: A.A.34 TOP: Writing Linear Equations

28 ANS: 2

$$\frac{6}{4a} - \frac{2}{3a} = \frac{18a - 8a}{12a^2} = \frac{10a}{12a^2} = \frac{5}{6a}$$

REF: 060929ia

STA: A.A.17

TOP: Addition and Subtraction of Rationals

29 ANS: 3

$$m = \frac{7-3}{-3-3} = \frac{4}{-6} = -\frac{2}{3} \quad y = mx + b$$

$$3 = -\frac{2}{3}(3) + b$$

$$3 = -2 + b$$

$$5 = b$$

REF: 011013ia

STA: A.A.35

TOP: Writing Linear Equations

30 ANS: 4

REF: 080825ia

STA: A.A.40

TOP: Systems of Linear Inequalities

31 ANS: 4

REF: 010927ia

STA: A.N.4

TOP: Operations with Scientific Notation

32 ANS: 2

REF: 060908ia

STA: A.S.21

TOP: Empirical Probability

33 ANS: 4

$$\frac{\text{distance}}{\text{time}} = \frac{24}{6} = 4$$

REF: 010902ia

STA: A.M.1

TOP: Speed

34 ANS: 4

REF: 060805ia

STA: A.S.12

TOP: Scatter Plots

35 ANS: 2

REF: 080901ia

STA: A.A.4

TOP: Modeling Equations

36 ANS: 2

$$3c + 4m = 12.50$$

$$3c + 2m = 8.50$$

$$2m = 4.00$$

$$m = 2.00$$

REF: 060806ia

STA: A.A.7

TOP: Writing Linear Systems

37 ANS: 3

$$35000(1 - 0.05)^4 \approx 28507.72$$

REF: fall0719ia

STA: A.A.9

TOP: Exponential Functions

38 ANS: 4

$$-2(x - 5) < 4$$

$$-2x + 10 < 4$$

$$-2x < -6$$

$$x > 3$$

REF: 080913ia

STA: A.A.21

TOP: Interpreting Solutions

39 ANS: 2

The median score, 10, is the vertical line in the center of the box.

REF: fall0709ia STA: A.S.5 TOP: Box-and-Whisker Plots

40 ANS: 1

$$x - 2y = 1$$

$$x + 4y = 7$$

$$-6y = -6$$

$$y = 1$$

REF: 080920ia STA: A.A.10 TOP: Solving Linear Systems

41 ANS: 4

$$-4x + 2 > 10$$

$$-4x > 8$$

$$x < -2$$

REF: 080805ia STA: A.A.21 TOP: Solving Inequalities

42 ANS: 2 REF: 011012ia STA: A.G.9 TOP: Quadratic-Linear Systems

43 ANS: 2 REF: 010909ia STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

44 ANS: 4 REF: fall0729ia STA: A.A.2 TOP: Expressions

45 ANS: 4

$$SA = 2lw + 2hw + 2lh = 2(3)(1.5) + 2(2)(1.5) + 2(3)(2) = 27$$

REF: 060827ia STA: A.G.2 TOP: Surface Area

46 ANS: 1 REF: 060903ia STA: A.A.12 TOP: Division of Powers

47 ANS: 4

$$25(x - 3) = 25x - 75$$

REF: 060823ia STA: A.A.1 TOP: Expressions

48 ANS: 4

Let x = youngest brother and $x + 4$ = oldest brother. $3x - (x + 4) = 48$.

$$2x - 4 = 48$$

$$x = 26$$

REF: 080928ia STA: A.A.6 TOP: Modeling Equations

49 ANS: 3

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{15}{17}$$

REF: 011008ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

50 ANS: 2 REF: 060830ia STA: A.A.9 TOP: Exponential Functions

51 ANS: 3

$$\sqrt{72} = \sqrt{36}\sqrt{2} = 6\sqrt{2}$$

REF: 010920ia STA: A.N.2 TOP: Simplifying Radicals

52 ANS: 2

The slope of the inequality is $-\frac{1}{2}$.

REF: fall0720ia STA: A.G.6 TOP: Linear Inequalities

53 ANS: 3

An element of the domain, 1, is paired with two different elements of the range, 3 and 7.

REF: 080919ia STA: A.G.3 TOP: Defining Functions

54 ANS: 3

$$b = 42 - r \quad r = 2b + 3$$

$$r = 2b + 3 \quad r = 2(42 - r) + 3$$

$$r = 84 - 2r + 3$$

$$3r = 87$$

$$r = 29$$

REF: 060812ia STA: A.A.7 TOP: Writing Linear Systems

55 ANS: 2

$$2x^2 + 10x - 12 = 2(x^2 + 5x - 6) = 2(x + 6)(x - 1)$$

REF: 080806ia STA: A.A.20 TOP: Factoring Polynomials

56 ANS: 2

REF: 080802ia STA: A.N.1 TOP: Identifying Properties

57 ANS: 2

$$x + 2y = 9$$

$$x - y = 3$$

$$3y = 6$$

$$y = 2$$

REF: 060925ia STA: A.A.10 TOP: Solving Linear Systems

58 ANS: 1

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

REF: 080826ia STA: A.A.18 TOP: Multiplication and Division of Rationals

59 ANS: 4



REF: 080822ia STA: A.S.8 TOP: Scatter Plots

60 ANS: 4

The transformation is a reflection in the x -axis.

REF: fall0722ia STA: A.G.4 TOP: Absolute Value

61 ANS: 3 REF: 010910ia STA: A.A.35 TOP: Writing Linear Equations

62 ANS: 4 REF: 011020ia STA: A.A.12 TOP: Multiplication of Powers

63 ANS: 2

$$\frac{6}{5x} - \frac{2}{3x} = \frac{18x - 10x}{15x^2} = \frac{8x}{15x^2} = \frac{8}{15x}$$

REF: 010921ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

64 ANS: 2 REF: 080823ia STA: A.A.32 TOP: Slope

65 ANS: 2

If the car can travel 75 miles on 4 gallons, it can travel 300 miles on 16 gallons. $\frac{75}{4} = \frac{x}{16}$.

$$x = 300$$

REF: 080807ia STA: A.G.4 TOP: Graphing Functions and Relations

66 ANS: 1

The slope of both is -4 .

REF: 060814ia STA: A.A.38 TOP: Parallel and Perpendicular Lines

67 ANS: 4

The mean is $80.\bar{6}$, the median is 84.5 and the mode is 87.

REF: 010907ia STA: A.S.4 TOP: Central Tendency

68 ANS: 3

$$\frac{(2x^3)(8x^5)}{4x^6} = \frac{16x^8}{4x^6} = 4x^2$$

REF: fall0703ia STA: A.A.12 TOP: Division of Powers

69 ANS: 3 REF: 060926ia STA: A.N.1 TOP: Properties of Reals

70 ANS: 4 REF: 010930ia STA: A.G.3 TOP: Defining Functions

71 ANS: 2

$$5\sqrt{20} = 5\sqrt{4\sqrt{5}} = 10\sqrt{5}$$

REF: 080922ia STA: A.N.2 TOP: Simplifying Radicals

72 ANS: 2 REF: 011005ia STA: A.A.5 TOP: Modeling Inequalities

73 ANS: 1

$$13.95 + 0.49s \leq 50.00$$

$$0.49s \leq 36.05$$

$$s \leq 73.57$$

REF: 080904ia STA: A.A.6 TOP: Modeling Inequalities

74 ANS: 4 REF: 011016ia STA: A.A.23 TOP: Transforming Formulas

75 ANS: 3

$$x^2 - 10x + 21 = 0$$

$$(x-7)(x-3) = 0$$

$$x = 7 \quad x = 3$$

REF: 010914ia STA: A.A.28 TOP: Solving Quadratics by Factoring

76 ANS: 3

$$m = \frac{4-10}{3-(-6)} = -\frac{2}{3}$$

REF: fall0716ia STA: A.A.33 TOP: Slope

77 ANS: 4 REF: 011025ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

78 ANS: 1

A rooster crows before sunrise, not because of the sun.

REF: fall0707ia STA: A.S.14 TOP: Analysis of Data

79 ANS: 2

$$l(l-5) = 24$$

$$l^2 - 5l - 24 = 0$$

$$(l-8)(l+3) = 0$$

$$l = 8$$

REF: 080817ia STA: A.A.8 TOP: Geometric Applications of Quadratics

80 ANS: 3 REF: fall0702ia STA: A.S.23 TOP: Theoretical Probability

81 ANS: 2 REF: 010915ia STA: A.A.5 TOP: Modeling Equations

82 ANS: 2 REF: 080916ia STA: A.G.8 TOP: Solving Quadratics by Graphing

83 ANS: 1

$$\sin C = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{13}{85}$$

REF: fall0721ia STA: A.A.42 TOP: Basic Trigonometric Ratios

84 ANS: 2

$$m = \frac{5-3}{2-7} = -\frac{2}{5}$$

REF: 010913ia STA: A.A.33 TOP: Slope

85 ANS: 2

$$\frac{2x^2 - 12x}{x-6} = \frac{2x(x-6)}{x-6} = 2x$$

REF: 060824ia STA: A.A.14 TOP: Rational Expressions

86 ANS: 4

Surveying persons leaving a football game about a sports budget contains the most bias.

REF: 080910ia STA: A.S.3 TOP: Analysis of Data

87 ANS: 2

$$\left| \frac{149.6 - 174.2}{149.6} \right| \approx 0.1644$$

REF: 080926ia STA: A.M.3 TOP: Error

88 ANS: 1 REF: 080813ia STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

89 ANS: 1

$$\frac{2}{x} - 3 = \frac{26}{x}$$

$$-3 = \frac{24}{x}$$

$$x = -8$$

REF: 010918ia STA: A.A.26 TOP: Solving Rationals

90 ANS: 3

$$\frac{12x^3 - 6x^2 + 2x}{2x} = \frac{2x(6x^2 - 3x + 1)}{2x} = 6x^2 - 3x + 1$$

REF: 011011ia STA: A.A.14 TOP: Rational Expressions

91 ANS: 4 REF: 080903ia STA: A.A.12 TOP: Multiplication of Powers

92 ANS: 2

$$1.5^3 = 3.375$$

REF: 060809ia STA: A.G.2 TOP: Volume

93 ANS: 3

The value of the upper quartile is the last vertical line of the box.

REF: 060915ia STA: A.S.6 TOP: Box-and-Whisker Plots

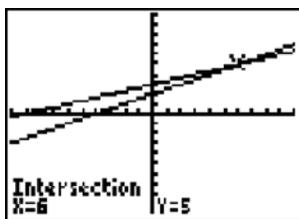
94 ANS: 4 REF: 060829ia STA: A.G.5 TOP: Graphing Quadratics

95 ANS: 3 REF: 080819ia STA: A.A.13 TOP: Addition and Subtraction of Polynomials

- 96 ANS: 3 REF: 060808ia STA: A.N.8 TOP: Permutations
 97 ANS: 3 REF: 060825ia STA: A.A.45 TOP: Pythagorean Theorem
 98 ANS: 1 REF: 060920ia STA: A.G.6 TOP: Linear Inequalities
 99 ANS: 3

$$|-5(5) + 12| = |-13| = 13$$

- REF: 080923ia STA: A.N.6 TOP: Absolute Value
 100 ANS: 4 REF: 010929ia STA: A.S.6 TOP: Box-and-Whisker Plots
 101 ANS: 3



$$\frac{k+4}{2} = \frac{k+9}{3}$$

$$3(k+4) = 2(k+9)$$

$$3k + 12 = 2k + 18$$

$$k = 6$$

- REF: 010906ia STA: A.A.26 TOP: Solving Equations with Fractional Expressions
 102 ANS: 4 REF: fall0715ia STA: A.A.5 TOP: Modeling Inequalities
 103 ANS: 1 REF: fall0723ia STA: A.M.3 TOP: Error
 104 ANS: 3

The age of a child does not cause the number of siblings he has, or vice versa.

- REF: 011030ia STA: A.S.14 TOP: Analysis of Data
 105 ANS: 3 REF: 060924ia STA: A.G.8 TOP: Solving Quadratics by Graphing
 106 ANS: 1

$$8^2 + 15^2 = c^2$$

$$c^2 = 289$$

$$c = 17$$

- REF: 080906ia STA: A.A.45 TOP: Pythagorean Theorem
 107 ANS: 1

$$\frac{1}{8} \times \frac{1}{8} = \frac{1}{64}$$

- REF: 010928ia STA: A.S.23 TOP: Probability of Independent Events

108 ANS: 1
 $0.07m + 19 \leq 29.50$
 $0.07m \leq 10.50$
 $m \leq 150$

REF: 010904ia STA: A.A.6 TOP: Modeling Inequalities

109 ANS: 4 REF: 060916ia STA: A.A.15 TOP: Undefined Rationals

110 ANS: 2
 $\sin U = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{15}{17}$

REF: 010919ia STA: A.A.42 TOP: Basic Trigonometric Ratios

111 ANS: 1
 $y = mx + b$
 $-6 = (-3)(4) + b$
 $b = 6$

REF: 060922ia STA: A.A.34 TOP: Writing Linear Equations

112 ANS: 4 REF: fall0717ia STA: A.G.4

113 ANS: 4
 $w(w + 5) = 36$
 $w^2 + 5w - 36 = 0$

REF: fall0726ia STA: A.A.5 TOP: Geometric Applications of Quadratics

114 ANS: 1
 $\left| \frac{289 - 282}{289} \right| \approx 0.024$

REF: 080828ia STA: A.M.3 TOP: Error

115 ANS: 3 REF: 080907ia STA: A.S.20 TOP: Theoretical Probability

116 ANS: 3
 $m = \frac{1 - (-4)}{-6 - 4} = -\frac{1}{2}$

REF: 060820ia STA: A.A.33 TOP: Slope

117 ANS: 4
 $x^2 - 7x + 6 = 0$
 $(x - 6)(x - 1) = 0$
 $x = 6 \quad x = 1$

REF: 060902ia STA: A.A.28 TOP: Roots of Quadratics

118 ANS: 4
 $A = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$

REF: 080912ia STA: A.A.30 TOP: Set Theory

119 ANS: 4

$$\frac{2^6}{2^1} = 2^5$$

REF: 060813ia STA: A.A.12 TOP: Division of Powers

120 ANS: 4 REF: 060906ia STA: A.A.4 TOP: Modeling Inequalities

121 ANS: 3 REF: 010917ia STA: A.A.29 TOP: Set Theory

122 ANS: 2

The volume of the cube using Ezra's measurements is 8 (2^3). The actual volume is 9.261 (2.1^3). The relative error is $\left| \frac{9.261 - 8}{9.261} \right| \approx 0.14$.

REF: 060928ia STA: A.M.3 TOP: Error

123 ANS: 4

$$V = \pi r^2 h = \pi \cdot 6^2 \cdot 15 \approx 1696.5$$

REF: fall0712ia STA: A.G.2 TOP: Volume

124 ANS: 1 REF: 010905ia STA: A.G.4 TOP: Graphing Functions and Relations

125 ANS: 3
 $25 - 18 = 7$

REF: 060822ia STA: A.S.9 TOP: Frequency Histograms, Bar Graphs and Tables

126 ANS: 1 REF: 080924ia STA: A.G.1 TOP: Compositions of Polygons and Circles

127 ANS: 4 REF: fall0730ia STA: A.G.3 TOP: Defining Functions

128 ANS: 1 REF: 080911ia STA: A.A.36 TOP: Parallel and Perpendicular Lines

129 ANS: 1 REF: 080902ia STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

130 ANS: 1 REF: 080803ia STA: A.A.4 TOP: Modeling Inequalities

131 ANS: 4

$$16^2 + b^2 = 34^2$$

$$b^2 = 900$$

$$b = 30$$

REF: 080809ia STA: A.A.45 TOP: Pythagorean Theorem

132 ANS: 3 REF: 060817ia STA: A.A.15 TOP: Undefined Rationals

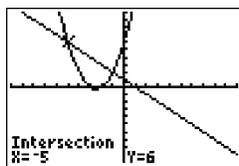
133 ANS: 3 REF: 080925ia STA: A.G.4 TOP: Identifying the Equation of a Graph

134 ANS: 4

$$\frac{x^2 - 1}{x + 1} \cdot \frac{x + 3}{3x - 3} = \frac{(x + 1)(x - 1)}{x + 1} \cdot \frac{x + 3}{3(x - 1)} = \frac{x + 3}{3}$$

REF: 060815ia STA: A.A.18 TOP: Multiplication and Division of Rationals

135 ANS: 2



$$x^2 + 5x + 6 = -x + 1 \quad y = -x + 1$$

$$x^2 + 6x + 5 = 0 \quad = -(-5) + 1$$

$$(x + 5)(x + 1) = 0 \quad = 6$$

$$x = -5 \text{ or } -1$$

REF: 080812ia STA: A.A.11 TOP: Quadratic-Linear Systems

136 ANS: 2

The two values are shoe size and height.

REF: fall0714ia STA: A.S.2 TOP: Analysis of Data

137 ANS: 4 REF: fall0704ia STA: A.A.29 TOP: Set Theory

138 ANS: 3

$$a + ar = b + r$$

$$a(1 + r) = b + r$$

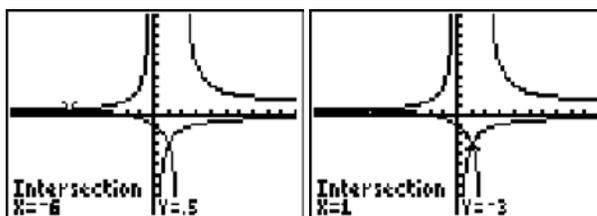
$$a = \frac{b + r}{1 + r}$$

REF: 060913ia STA: A.A.23 TOP: Transforming Formulas

139 ANS: 1 REF: 060804ia STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

140 ANS: 4



$$\frac{x+2}{x-2} = \frac{-3}{x}$$

$$x(x+2) = -3(x-2)$$

$$x^2 + 2x = -3x + 6$$

$$x^2 + 5x - 6 = 0$$

$$(x + 6)(x - 1) = 0$$

$$x = -6 \text{ or } 1$$

REF: 011028ia STA: A.A.26 TOP: Solving Rationals

141 ANS: 1

 $30^2 + 40^2 = c^2$. 30, 40, 50 is a multiple of 3, 4, 5.

$$2500 = c^2$$

$$50 = c$$

REF: fall0711ia STA: A.A.45 TOP: Pythagorean Theorem

142 ANS: 1 REF: 060807ia STA: A.A.13 TOP: Multiplication of Powers

143 ANS: 2

The set of integers greater than -2 and less than 6 is $\{-1, 0, 1, 2, 3, 4, 5\}$. The subset of this set that is the positive factors of 5 is $\{1, 5\}$. The complement of this subset is $\{-1, 0, 2, 3, 4\}$.

REF: 060818ia STA: A.A.30 TOP: Set Theory

144 ANS: 4 REF: 060927ia STA: A.N.4 TOP: Operations with Scientific Notation

145 ANS: 2 REF: 080810ia STA: A.A.36 TOP: Parallel and Perpendicular Lines

146 ANS: 4 REF: 060930ia STA: A.A.29 TOP: Set Theory

147 ANS: 3

$$3ax + b = c$$

$$3ax = c - b$$

$$x = \frac{c - b}{3a}$$

REF: 080808ia STA: A.A.23 TOP: Transforming Formulas

148 ANS: 1 REF: fall0728ia STA: A.A.15 TOP: Undefined Rationals

149 ANS: 2

$$\tan 32 = \frac{x}{25}$$

$$x \approx 15.6$$

REF: 080914ia STA: A.A.44 TOP: Using Trigonometry to Find a Side

150 ANS: 1 REF: 080824ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

151 ANS: 2 REF: 060923ia STA: A.A.13 TOP: Addition and Subtraction of Polynomials

152 ANS: 3

$$500(1 + 0.06)^3 \approx 596$$

REF: 080929ia STA: A.A.9 TOP: Exponential Functions

153 ANS: 4

$$A(-3, 4) \text{ and } B(5, 8). m = \frac{4 - 8}{-3 - 5} = \frac{-4}{-8} = \frac{1}{2}$$

REF: 011007ia STA: A.A.33 TOP: Slope

154 ANS: 3

The value of the third quartile is the last vertical line of the box.

REF: 080818ia STA: A.S.6 TOP: Box-and-Whisker Plots

155 ANS: 2 REF: 011019ia STA: A.S.12 TOP: Scatter Plots

156 ANS: 3 REF: fall0710ia STA: A.A.31 TOP: Set Theory

157 ANS: 3

The number of correct answers on a test causes the test score.

REF: 080908ia STA: A.S.13 TOP: Analysis of Data

158 ANS: 4 REF: 010908ia STA: A.A.9 TOP: Exponential Functions

159 ANS: 1

$$x = \frac{-b}{2a} = \frac{-(-16)}{2(1)} = 8. \quad y = (8)^2 - 16(8) + 63 = -1$$

REF: 060918ia STA: A.A.41 TOP: Identifying the Vertex of a Quadratic Given Equation

160 ANS: 1

$$so = f + 60 \quad j = 2f - 50 \quad se = 3f. \quad f + (f + 60) + (2f - 50) + 3f = 1424$$

$$7f + 10 = 1424$$

$$f = 202$$

REF: 060917ia STA: A.A.7 TOP: Writing Linear Systems

161 ANS: 1

$$-2x + 5 > 17$$

$$-2x > 12$$

$$x < -6$$

REF: fall0724ia STA: A.A.21 TOP: Interpreting Solutions

162 ANS: 3

mean = 6, median = 6 and mode = 7

REF: 080804ia STA: A.S.4 TOP: Central Tendency

163 ANS: 4

In (4), each element in the domain corresponds to a unique element in the range.

REF: 011018ia STA: A.G.3 TOP: Defining Functions

164 ANS: 3

$$3^2 + 5^2 = x^2$$

$$34 = x^2$$

$$\sqrt{34} = x$$

REF: 060909ia STA: A.A.45 TOP: Pythagorean Theorem

165 ANS: 4

$$\frac{25x - 125}{x^2 - 25} = \frac{25(x - 5)}{(x + 5)(x - 5)} = \frac{25}{x + 5}$$

REF: 080821ia STA: A.A.16 TOP: Rational Expressions

166 ANS: 1

The slope of $y = 3 - 2x$ is -2 . Using $m = -\frac{A}{B}$, the slope of $4x + 2y = 5$ is $-\frac{4}{2} = -2$.

REF: 010926ia STA: A.A.38 TOP: Parallel and Perpendicular Lines

167 ANS: 4

$$6\sqrt{50} + 6\sqrt{2} = 6\sqrt{25}\sqrt{2} + 6\sqrt{2} = 30\sqrt{2} + 6\sqrt{2} = 36\sqrt{2}$$

REF: 011024ia STA: A.N.3 TOP: Operations with Radicals

168 ANS: 2 REF: 011027ia STA: A.A.3 TOP: Expressions

169 ANS: 3

$$\sin A = \frac{10}{16} \quad B = 180 - (90 + 38.7) = 51.3$$

$$A \approx 38.7$$

REF: 080829ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

170 ANS: 2

$$1P + 2C = 5$$

$$1P + 4C = 6$$

$$2C = 1$$

$$C = 0.5$$

REF: 011003ia STA: A.A.7 TOP: Writing Linear Systems

171 ANS: 1

$$\frac{\sqrt{32}}{4} = \frac{\sqrt{16}\sqrt{2}}{4} = \sqrt{2}$$

REF: 060828ia STA: A.N.2 TOP: Simplifying Radicals

172 ANS: 3

$$5x + 2y = 48$$

$$3x + 2y = 32$$

$$2x = 16$$

$$x = 8$$

REF: fall0708ia STA: A.A.7 TOP: Solving Linear Systems

173 ANS: 4 REF: 080827ia STA: A.A.12 TOP: Powers of Powers

174 ANS: 2 REF: fall0701ia STA: A.S.7 TOP: Scatter Plots

175 ANS: 3 REF: fall0706ia STA: A.A.19

TOP: Factoring the Difference of Perfect Squares

176 ANS: 3

Frequency is not a variable.

REF: 011014ia STA: A.S.2 TOP: Analysis of Data

177 ANS: 3 REF: fall0705ia STA: A.N.1 TOP: Identifying Properties

178 ANS: 3 REF: 011017ia STA: A.G.5 TOP: Graphing Quadratics

179 ANS: 4

$$\frac{344 \text{ m}}{\text{sec}} \times \frac{60 \text{ sec}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = 1,238,400 \frac{\text{m}}{\text{hr}}$$

REF: 060911ia STA: A.M.2 TOP: Conversions

180 ANS: 2

$$\sqrt{32} = \sqrt{16} \sqrt{2} = 4\sqrt{2}$$

REF: 060910ia STA: A.N.2 TOP: Simplifying Radicals

181 ANS: 1

$${}_4P_4 = 4 \times 3 \times 2 \times 1 = 24$$

REF: 080816ia STA: A.N.8 TOP: Permutations

182 ANS: 1 REF: 060811ia STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

183 ANS: 1

$$m = \frac{4 - (-4)}{-5 - 15} = -\frac{2}{5}$$

REF: 080915ia STA: A.A.33 TOP: Slope

184 ANS: 2 REF: 060904ia STA: A.A.1 TOP: Expressions

185 ANS: 2 REF: 080815ia STA: A.G.1 TOP: Compositions of Polygons and Circles

186 ANS: 1 REF: 060801ia STA: A.G.4 TOP: Families of Functions

187 ANS: 2 REF: fall0725ia STA: A.N.4 TOP: Operations with Scientific Notation

188 ANS: 2

Debbie failed to distribute the 3 properly.

REF: 011009ia STA: A.A.22 TOP: Solving Equations

189 ANS: 2 REF: 011002ia STA: A.S.20 TOP: Theoretical Probability

190 ANS: 4

$$P(O) = \frac{3}{6}, P(E) = \frac{3}{6}, P(< 6) = \frac{5}{6}, P(> 4) = \frac{2}{6}$$

REF: 010903ia STA: A.S.22 TOP: Theoretical Probability

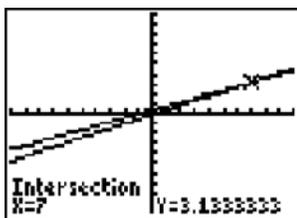
191 ANS: 4

$$SA = 2lw + 2hw + 2lh = 2(2)(3) + 2(4)(3) + 2(2)(4) = 52$$

REF: 011029ia STA: A.G.2 TOP: Surface Area

192 ANS: 2 REF: 080930ia STA: A.S.17 TOP: Scatter Plots

193 ANS: 4



$$\frac{2x}{5} + \frac{1}{3} = \frac{7x-2}{15}$$

$$\frac{(2x \times 3) + (5 \times 1)}{5 \times 3} = \frac{7x-2}{15}$$

$$\frac{6x+5}{15} = \frac{7x-2}{15}$$

$$6x+5 = 7x-2$$

$$x = 7$$

REF: 080820ia STA: A.A.26 TOP: Solving Equations with Fractional Expressions

194 ANS: 2

$$\frac{3}{5}(x+2) = x-4$$

$$3(x+2) = 5(x-4)$$

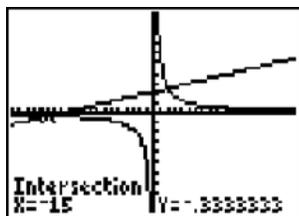
$$3x+6 = 5x-20$$

$$26 = 2x$$

$$x = 13$$

REF: 080909ia STA: A.A.25 TOP: Solving Equations with Fractional Expressions

195 ANS: 4



$$\frac{5}{x} = \frac{x+13}{6}$$

$$x^2 + 13x = 30$$

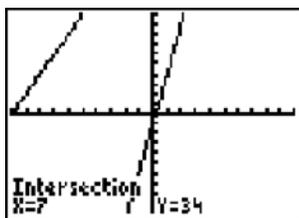
$$x^2 + 13x - 30 = 0$$

$$(x+15)(x-2) = 0$$

$$x = -15 \text{ or } 2$$

REF: 060826ia STA: A.A.26 TOP: Solving Rationals

196 ANS: 4



$$5p - 1 = 2p + 20$$

$$3p = 21$$

$$p = 7$$

REF: 080801ia STA: A.A.22 TOP: Solving Equations

197 ANS: 2 REF: 010916ia STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

198 ANS: 3

$$\cos 30 = \frac{x}{24}$$

$$x \approx 21$$

REF: 010912ia STA: A.A.44 TOP: Using Trigonometry to Find a Side

199 ANS: 3

$$F = \frac{9}{5}C + 32 = \frac{9}{5}(15) + 32 = 59$$

REF: 010901ia STA: A.M.2 TOP: Conversions

200 ANS: 2 REF: 060821ia STA: A.A.5 TOP: Modeling Inequalities

201 ANS: 4

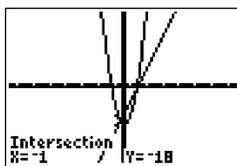
$$\frac{5}{45} = \frac{8}{x}$$

$$5x = 360$$

$$x = 72$$

REF: 060901ia STA: A.M.1 TOP: Speed

202 ANS: 2



$$x^2 - x - 20 = 3x - 15 \quad y = 3x - 15$$

$$x^2 - 4x - 6 = 0 \quad = 3(-1) - 15$$

$$(x - 5)(x + 1) = 0 \quad = -18$$

$$x = 5 \text{ or } -1$$

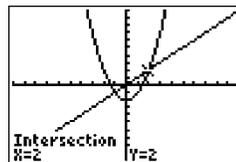
REF: 010922ia STA: A.A.11 TOP: Quadratic-Linear Systems

203 ANS: 2

$$\frac{x^2 - 2x - 15}{x^2 + 3x} = \frac{(x-5)(x+3)}{x(x+3)} = \frac{x-5}{x}$$

REF: 060921ia STA: A.A.16 TOP: Rational Expressions

204 ANS: 4



$x^2 - 2 = x$ Since $y = x$, the solutions are $(2, 2)$ and $(-1, -1)$.

$$x^2 - x - 2 = 0$$

$$(x-2)(x+1) = 0$$

$$x = 2 \text{ or } -1$$

REF: 060810ia STA: A.A.11 TOP: Quadratic-Linear Systems

205 ANS: 1

$$-|a-b| = -|7-(-3)| = -|-10| = -10$$

REF: 011010ia STA: A.N.6 TOP: Absolute Value

206 ANS: 2

$$L + S = 47$$

$$L - S = 15$$

$$2L = 62$$

$$L = 31$$

REF: 060912ia STA: A.A.7 TOP: Modeling Linear Systems

207 ANS: 1

$$m = \frac{3-0}{0-2} = -\frac{3}{2}. \text{ Using the given y-intercept } (0, 3) \text{ to write the equation of the line } y = -\frac{3}{2}x + 3.$$

REF: fall0713ia STA: A.A.35 TOP: Writing Linear Equations

208 ANS: 1

$$\text{The slope of } 2x - 4y = 16 \text{ is } \frac{-A}{B} = \frac{-2}{-4} = \frac{1}{2}$$

REF: 011026ia STA: A.A.38 TOP: Parallel and Perpendicular Lines

209 ANS: 3

$$0.75 \text{ hours} = 45 \text{ minutes. } \frac{120}{1} = \frac{x}{45}$$

$$x = 5400$$

REF: 080814ia STA: A.M.1 TOP: Using Rate

210 ANS: 4

$$\frac{(d \times 3) + (2 \times 2d)}{2 \times 3} = \frac{3d + 4d}{6} = \frac{7d}{6}$$

REF: fall0727ia

STA: A.A.17

TOP: Expressions

Integrated Algebra 2 Point Regents Exam Questions Answer Section

211 ANS:

$$\frac{3}{8}: P(s_1 < 4) \times P(s_2 = \text{back}) = \frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$$

PTS: 2 REF: 080832ia STA: A.S.23 TOP: Probability of Independent Events

212 ANS:

$$\frac{3}{8}: (\text{H,H,H}), (\text{H,H,T}), (\text{H,T,H}), (\mathbf{H,T,T}), (\text{T,H,H}), (\mathbf{T,H,T}), (\mathbf{T,T,H}), (\text{T,T,T})$$

PTS: 2 REF: 080933ia STA: A.S.19 TOP: Sample Space

213 ANS:

$$60. {}_5P_3 = 60$$

PTS: 2 REF: 060931ia STA: A.N.8 TOP: Permutations

214 ANS:

$$\{1,2,4,5,9,10,12\}$$

PTS: 2 REF: 080833ia STA: A.A.30 TOP: Set Theory

215 ANS:

$$4x(x+3)(x-3). 4x^3 - 36x = 4x(x^2 - 9) = 4x(x+3)(x-3)$$

PTS: 2 REF: 060932ia STA: A.A.19
TOP: Factoring the Difference of Perfect Squares

216 ANS:

$$\frac{3k^2m^6}{4}$$

PTS: 2 REF: 010932ia STA: A.A.12 TOP: Division of Powers

217 ANS:

$$d = 6.25h, 250. d = 6.25(40) = 250$$

PTS: 2 REF: 010933ia STA: A.N.5 TOP: Direct Variation

218 ANS:

$$\frac{1}{8}. \text{ After the English and social studies books are taken, 8 books are left and 1 is an English book.}$$

PTS: 2 REF: 060933ia STA: A.S.18 TOP: Conditional Probability

219 ANS:

$$\text{orchestra: } \frac{3}{26} > \frac{4}{36}$$

PTS: 2 REF: 011033ia STA: A.S.22 TOP: Theoretical Probability

220 ANS:

$36 - 9\pi$. 15.6. Area of square–area of 4 quarter circles. $(3 + 3)^2 - 3^2\pi = 36 - 9\pi$

PTS: 2 REF: 060832ia STA: A.G.1 TOP: Compositions of Polygons and Circles

221 ANS:

$$111.25. \frac{\text{distance}}{\text{time}} = \frac{89}{0.8} = 111.25$$

PTS: 2 REF: 080831ia STA: A.M.1 TOP: Speed

222 ANS:

Ann's. $\frac{225}{15} = 15$ mpg is greater than $\frac{290}{23.2} = 12.5$ mpg

PTS: 2 REF: 060831ia STA: A.M.1 TOP: Using Rate

223 ANS:

Not all of the homework problems are equations. The first problem is an expression.

PTS: 2 REF: 080931ia STA: A.A.3 TOP: Expressions

224 ANS:

16. 12 feet equals 4 yards. $4 \times 4 = 16$.

PTS: 2 REF: 011031ia STA: A.M.2 TOP: Conversions

225 ANS:

$$50. 12 + 10 + 12 + \frac{1}{2}(10\pi) \approx 50$$

PTS: 2 REF: 010931ia STA: A.G.1 TOP: Compositions of Polygons and Circles

226 ANS:

$$0 \leq t \leq 40$$

PTS: 2 REF: 060833ia STA: A.A.31 TOP: Set Theory

227 ANS:

33.4. Serena needs 24 $(9 + 6 + 9)$ feet of fencing to surround the rectangular portion of the garden. The length of the fencing needed for the semicircular portion of the garden is $\frac{1}{2}\pi d = 3\pi \approx 9.4$ feet.

PTS: 2 REF: fall0733ia STA: A.G.1 TOP: Compositions of Polygons and Circles

228 ANS:

$$53. \sin A = \frac{16}{20}$$

$$A \approx 53$$

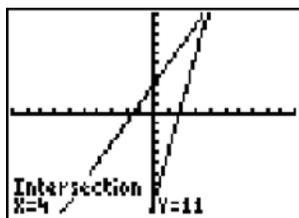
PTS: 2 REF: 011032ia STA: A.A.43 TOP: Using Trigonometry to Find an Angle

229 ANS:

$$5,112. (12 \times 30 \times 16) - (6 \times 12 \times 9) = 5112$$

PTS: 2 REF: 080932ia STA: A.G.2 TOP: Volume

230 ANS:



4. $3 + 2g = 5g - 9$

$12 = 3g$

$g = 4$

PTS: 2

REF: fall0732ia

STA: A.A.22

TOP: Solving Equations

231 ANS:

$30\sqrt{2} \cdot 5\sqrt{72} = 5\sqrt{36}\sqrt{2} = 30\sqrt{2}$

PTS: 2

REF: fall0731ia

STA: A.N.2

TOP: Simplifying Radicals

Integrated Algebra 3 Point Regents Exam Questions Answer Section

232 ANS:

Greg's rate of 5.5 is faster than Dave's rate of 5.3. $\frac{\text{distance}}{\text{time}} = \frac{11}{2} = 5.5$. $\frac{16}{3} = 5.\bar{3}$

PTS: 3 REF: 080936ia STA: A.M.1 TOP: Speed

233 ANS:

56. If the circumference of circle O is 16π inches, the diameter, \overline{AD} , is 16 inches and the length of \overline{BC} is 12 inches $\frac{3}{4} \times 16$. The area of trapezoid $ABCD$ is $\frac{1}{2} \times 4(12 + 16) = 56$.

PTS: 3 REF: 060934ia STA: A.G.1 TOP: Compositions of Polygons and Circles

234 ANS:

$$y = \frac{2}{5}x + 2. \quad m = \frac{4-0}{5-(-5)} = \frac{2}{5}. \quad y = mx + b$$

$$4 = \frac{2}{5}(5) + b$$

$$b = 2$$

PTS: 3 REF: 080836ia STA: A.A.35 TOP: Writing Linear Equations

235 ANS:

$$\frac{3}{4x-8} \cdot \frac{3x+6}{4x+12} \div \frac{x^2-4}{x+3} = \frac{3(x+2)}{4(x+3)} \cdot \frac{x+3}{(x+2)(x-2)} = \frac{3}{4(x-2)}$$

PTS: 3 REF: 010935ia STA: A.A.18 TOP: Multiplication and Division of Rationals

236 ANS:

$$-2, 3. \quad x^2 - x = 6$$

$$x^2 - x - 6 = 0$$

$$(x-3)(x+2) = 0$$

$$x = 3 \text{ or } -2$$

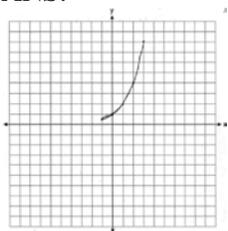
PTS: 3 REF: 011034ia STA: A.A.27 TOP: Solving Quadratics by Factoring

237 ANS:

$$5,583.86. \quad A = P(1+R)^t = 5000(1+0.0375)^3 \approx 5583.86$$

PTS: 3 REF: 060935ia STA: A.A.9 TOP: Exponential Functions

238 ANS:



The graph will never intersect the x -axis as $2^x > 0$ for all values of x .

PTS: 3 REF: 080835ia STA: A.G.4 TOP: Exponential Functions

239 ANS:

$$0.102. \frac{(5.3 \times 8.2 \times 4.1) - (5 \times 8 \times 4)}{5.3 \times 8.2 \times 4.1} = \frac{178.16 - 160}{178.16} = 0.102$$

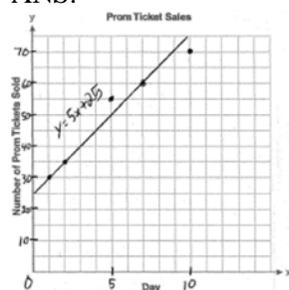
PTS: 3 REF: 011036ia STA: A.M.3 TOP: Error

240 ANS:

$$\frac{1}{6}, 16.67\%, \$13.50. \frac{18 - 15}{18} = \frac{1}{6}. 18 \times 0.75 = 13.5$$

PTS: 3 REF: 060835ia STA: A.N.5 TOP: Percents

241 ANS:



PTS: 3 REF: 060936ia STA: A.S.8 TOP: Scatter Plots

242 ANS:

$$60 - 42\sqrt{5}. 3\sqrt{20}(2\sqrt{5} - 7) = 6\sqrt{100} - 21\sqrt{20} = 60 - 21\sqrt{4}\sqrt{5} = 60 - 42\sqrt{5}$$

PTS: 3 REF: 080834ia STA: A.N.3 TOP: Operations with Radicals

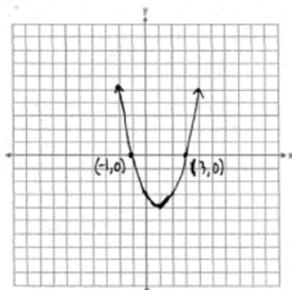
243 ANS:

$$(-2, 11). \quad x = \frac{-b}{2a} = \frac{-(-8)}{2(-2)} = -2$$

$$y = -2(-2)^2 - 8(-2) + 3 = 11$$

PTS: 3 REF: 080934ia STA: A.A.41
TOP: Identifying the Vertex of a Quadratic Given Equation

244 ANS:



PTS: 3 REF: 060836ia STA: A.G.8 TOP: Solving Quadratics by Graphing

245 ANS:

7. $15x + 22 \geq 120$

$$x \geq 6.5\bar{3}$$

PTS: 3 REF: fall0735ia STA: A.A.6 TOP: Modeling Inequalities

246 ANS:

1,512, 1,551.25, 0.025. $36 \times 42 = 1512$. $36.5 \times 42.5 = 1551.25$. $RE = \left| \frac{1512 - 1551.25}{1551.25} \right| \approx 0.025$.

PTS: 3 REF: 010934ia STA: A.M.3 TOP: Error

247 ANS:

$10 + 2d \geq 75, 33. \quad 10 + 2d \geq 75$

$$d \geq 32.5$$

PTS: 3 REF: 060834ia STA: A.A.6 TOP: Modeling Inequalities

248 ANS:

(S,S), (S,K), (S,D), (K,S), (K,K), (K,D), (D,S), (D,K), (D,D), $\frac{4}{9}$

PTS: 3 REF: fall0736ia STA: A.S.19 TOP: Sample Space

249 ANS:

$\frac{38}{\pi}, 2. \quad V = \pi r^2 h \quad \cdot \quad \frac{36}{\left(\frac{38}{\pi}\right)} \approx 2.97. \text{ Three cans will not fit. The maximum number is 2.}$

$$342 = \pi \left(\frac{6}{2}\right)^2 h$$

$$\frac{342}{9\pi} = h$$

$$\frac{38}{\pi} = h$$

PTS: 3 REF: 010936ia STA: A.G.2 TOP: Volume

250 ANS:
81.3, 80, both increase

PTS: 3 REF: 011035ia STA: A.S.16 TOP: Central Tendency

251 ANS:
30.4%; no, 23.3%. $\frac{7.50-5.75}{5.75} = 30.4\%$. $\frac{7.50-5.75}{7.50} = 23.3\%$

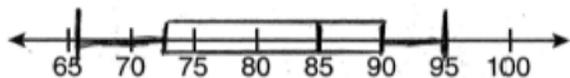
PTS: 3 REF: 080935ia STA: A.N.5 TOP: Percents

252 ANS:
50, 1.5, 10. $\frac{\text{distance}}{\text{time}} = \frac{60}{1.2} = 50$. $\frac{\text{distance}}{\text{time}} = \frac{60}{40} = 1.5$. speed \times time = $55 \times 2 = 110$. $120 - 110 = 10$

PTS: 3 REF: fall0734ia STA: A.M.1 TOP: Speed

Integrated Algebra 4 Point Regents Exam Questions Answer Section

253 ANS:



PTS: 4

REF: 080939ia

STA: A.S.5

TOP: Box-and-Whisker Plots

254 ANS:

$$39, 63. \quad \tan 52 = \frac{50}{x}, \quad \sin 52 = \frac{50}{x}$$

$$x \approx 39 \quad x \approx 63$$

PTS: 4

REF: 060937ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

255 ANS:

6, 8, 10. Three consecutive even integers are x , $x + 2$ and $x + 4$. $(x + 2)(x + 4) = 10x + 20$

$$x^2 + 6x + 8 = 10x + 20$$

$$x^2 - 4x - 12 = 0$$

$$(x - 6)(x + 2) = 0$$

$$x = 6$$

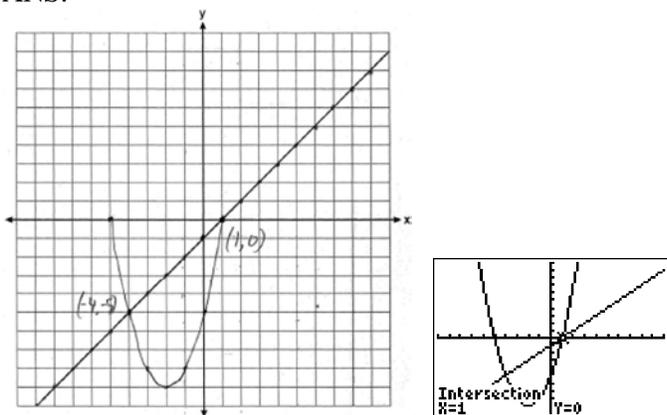
PTS: 4

REF: 011039ia

STA: A.A.8

TOP: Writing Quadratics

256 ANS:



PTS: 4

REF: 080839ia

STA: A.G.9

TOP: Quadratic-Linear Systems

257 ANS:

618.45, 613.44, 0.008. $21.7 \times 28.5 = 618.45$. $21.6 \times 28.4 = 613.44$. $\left| \frac{618.45 - 613.44}{613.44} \right| \approx 0.008$. An error of less than 1% would seem to be insignificant.

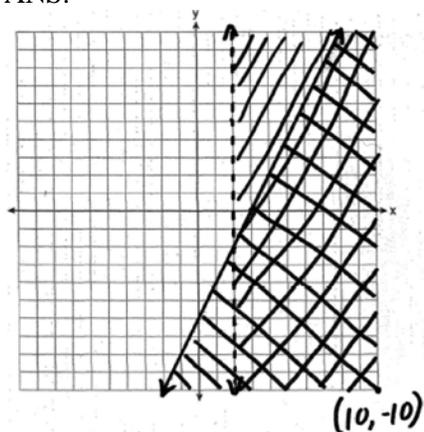
PTS: 4

REF: 060838ia

STA: A.M.3

TOP: Error

258 ANS:



PTS: 4 REF: 010938ia STA: A.G.7 TOP: Systems of Linear Inequalities

259 ANS:

$$w(w + 15) = 54, 3, 18. \quad w(w + 15) = 54$$

$$w^2 + 15w - 54 = 0$$

$$(w + 18)(w - 3) = 0$$

$$w = 3$$

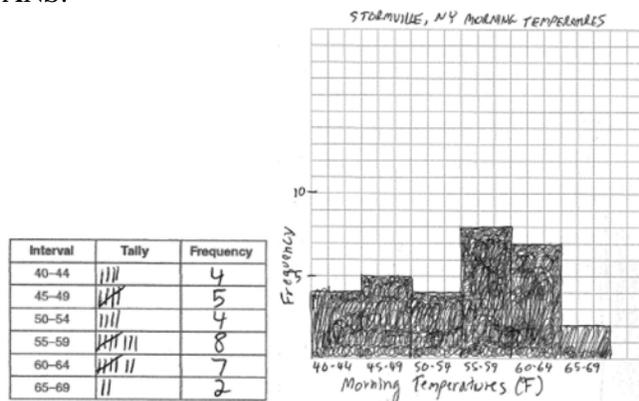
PTS: 4 REF: 060837ia STA: A.A.8 TOP: Geometric Applications of Quadratics

260 ANS:

$$\frac{x-7}{3x} \cdot \frac{2x^2-8x-42}{6x^2} \div \frac{x^2-9}{x^2-3x} = \frac{2(x^2-4x-21)}{6x^2} \cdot \frac{x(x-3)}{(x+3)(x-3)} = \frac{(x-7)(x+3)}{3x} \cdot \frac{1}{x+3} = \frac{x-7}{3x}$$

PTS: 4 REF: 080937ia STA: A.A.18 TOP: Multiplication and Division of Rationals

261 ANS:



PTS: 4 REF: 060938ia STA: A.S.5
TOP: Frequency Histograms, Bar Graphs and Tables

262 ANS:

$$6, -2. \quad \frac{x+1}{x} = \frac{-7}{x-12}$$

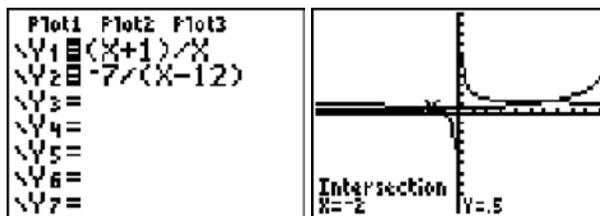
$$(x+1)(x-12) = -7x$$

$$x^2 - 11x - 12 = -7x$$

$$x^2 - 4x - 12 = 0$$

$$(x-6)(x+2) = 0$$

$$x = 6 \text{ or } -2$$



PTS: 4

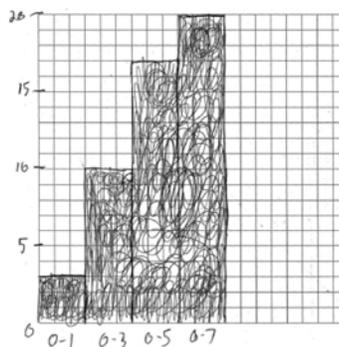
REF: fall0739ia

STA: A.A.26

TOP: Solving Rationals

263 ANS:

Number of Days Outside			Number of Days Outside	
Interval	Tally	Frequency	Interval	Cumulative Frequency
0-1		3	0-1	3
2-3		7	0-3	10
4-5		7	0-5	17
6-7		3	0-7	20



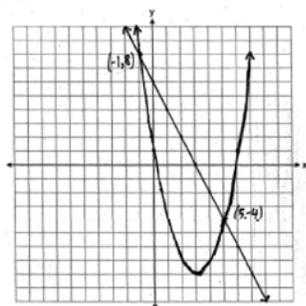
PTS: 4

REF: 080838ia

STA: A.S.5

TOP: Frequency Histograms, Bar Graphs and Tables

264 ANS:



PTS: 4

REF: 060939ia

STA: A.G.9

TOP: Quadratic-Linear Systems

265 ANS:

$$m = 50¢, p = 15¢. \quad 3m + 2p = 1.80. \quad 9m + 6p = 5.40. \quad 4(.50) + 6p = 2.90$$

$$4m + 6p = 2.90 \quad 4m + 6p = 2.90 \quad 6p = .90$$

$$5m = 2.50 \quad p = \$0.15$$

$$m = \$0.50$$

PTS: 3 REF: 080837ia STA: A.A.35 TOP: Writing Linear Systems

266 ANS:

$$(-2, 5). \quad 3x + 2y = 4 \quad 12x + 8y = 16. \quad 3x + 2y = 4$$

$$4x + 3y = 7 \quad 12x + 9y = 21 \quad 3x + 2(5) = 4$$

$$y = 5 \quad 3x = -6$$

$$x = -2$$

PTS: 4 REF: 010937ia STA: A.A.10 TOP: Solving Linear Systems

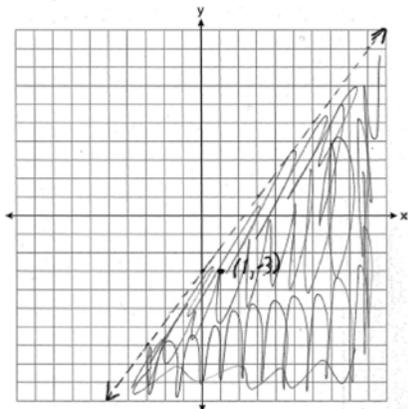
267 ANS:

315,000, 180,000, the median better represents value since it is closer to more prices than the mean.

PTS: 4 REF: 060839ia STA: A.S.4

TOP: Frequency Histograms, Bar Graphs and Tables

268 ANS:

(1, -3) is in the solution set. $4(1) - 3(-3) > 9$

$$4 + 9 > 9$$

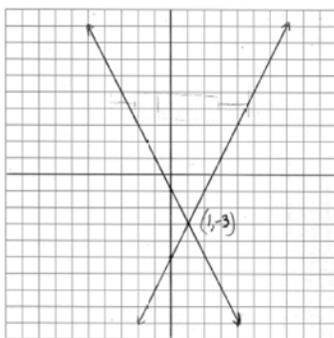
PTS: 4 REF: 011038ia STA: A.G.6 TOP: Linear Inequalities

269 ANS:

(H,F,M), (H,F,J), (H,F,S), (H,A,M), (H,A,J), (H,A,S), (C,F,M), (C,F,J), (C,F,S), (C,A,M), (C,A,J), (C,A,S), (T,F,M), (T,F,J), (T,F,S), (T,A,M), (T,A,J), (T,A,S). There are 18 different kids' meals, 12 do not include juice and 6 include chicken nuggets.

PTS: 4 REF: 010939ia STA: A.S.19 TOP: Sample Space

270 ANS:



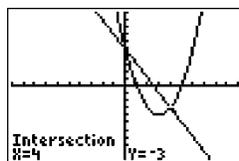
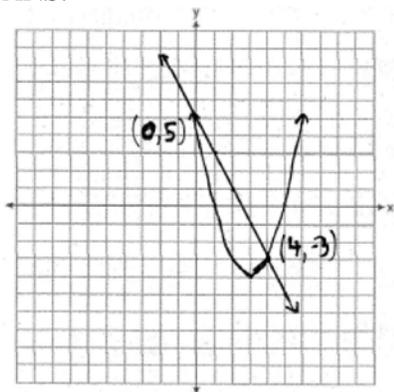
PTS: 4 REF: 080938ia STA: A.G.7 TOP: Solving Linear Systems

271 ANS:

225000, 175000, the median better represents the value since it is closer to more values than the mean.

PTS: 4 REF: fall0737ia STA: A.S.4
TOP: Frequency Histograms, Bar Graphs and Tables

272 ANS:



X	Y ₁	Y ₂
0	5	5
1	0	2
2	-3	1
3	-4	0
4	-3	-1
5	0	0
X=0		

PTS: 4 REF: fall0738ia STA: A.G.9 TOP: Quadratic-Linear Systems

273 ANS:

15,600,000, 4,368,000. $10 \times 10 \times 10 \times 26 \times 25 \times 24 = 15,600,000$. $10 \times 9 \times 8 \times 26 \times 25 \times 24 = 11,232,000$.
 $15,600,000 - 11,232,000 = 4,368,000$.

PTS: 4 REF: 011037ia STA: A.N.8 TOP: Permutations