HAITIAN CREOLE EDITION
REGENTS EXAMINATION IN
INTEGRATED ALGEBRA
TEST SAMPLER
FALL 2007

EGZAMEN REGENTS
(*REGENTS EXAMINATION*)
ALJÈB ENTEGRE
MODÈL EGZAMEN
OTÒN 2007

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Office of Standards, Assessments and Reporting
Albany, New York 12234
www.emsc.nysed.gov/osa/

THE STATE EDUCATION DEPARTMENT/THE UNIVERSITY OF THE STATE OF NEW YORK/ALBANY, NY 12234

David Abrams, Assistant Commissioner
Office of Standards, Assessments and Reporting

Oktòb 2007

Chè kolèg mwen yo:

Nou byen kontan wè w tounen pou yon nouvo ane lekòl. Menm jan mwen te di w nan lèt mwen te ekri mwa pase a, se premye ane nap fè yon tranzisyon pou nou ale nan nouvo Egzamen Regents (*Regents Examinations*) yo ki genyen pou matematik la. Nap kontinye devlope nouvo Egzamen Regents nan Aljèb Entegre la, epi premye fwa nou pral bay egzamen an se an jen 2008. Egzamen yo pral bay la, se va premye pa ki pral fèt nan tranzisyon pou soti nan Matematik A ak Matematik B pou ale nan Aljèb Entegre, Jeyometri, ak Aljèb 2/Trigonometri, epi se yon tranzisyon ki pral fèt an plizyè etap pandan pwochen ane ki pral vini yo.

Egzamen Regents nan Aljèb Entegre ap devlope pou evalye rannman elèv yo bay nan Estanda pou Aprann Matematik la ak nan pwogram etid debaz la. Modèl Egzamen ki genyen pou Egzamen Regents nan Aljèb Entegre nou bay la gen kalite kesyon sa yo, jan yo poze kesyon yo, epi gid kap devlope sou fason pou korije ak pou bay nòt (*scoring guides*) pou egzamen an. Li gen ladan tou egzanp travay elèv ki soti nan lòt egzamen yo pran nan anviwonman edikasyonèl. Ou kapab enprime ak epi fè kopi Modèl Egzamen sa a pou w itilize nan klas ou yo lè wap prezante kou w yo.

Depatman an fyè de tradisyon li genyen pou li fè pwofesè nan Eta New York yo patisipe nan tout yon seri inisyativ ki genyen pou gide pwogram etid la. Pandan ane ki pase yo, gen dèmilye pwofesè ki travay avèk nou, epi espètiz diferan anseyan ki reprezante popilasyon elèv diferan ki genyen nan New York yo endispansab pou dirije travay enpòtan sa a.

Nou sèvi ak paj sit wèb depatman an ki rele Nap chèche moun ki espesyalize nan matyè sa yo (*Call for Expertise*), **pou nou ankouraje pwofesè yo patisipe nan aktivite pou devlope egzamen ak pou etabli estanda yo**. Tanpri telechaje epi ranpli aplikasyon Nap chèche moun ki espesyalize nan matyè sa yo la. Ou ka jwenn li nan:

http://www.emsc.nysed.gov/ciai/call.htm

Mèsi pou tout travay ou fè onon elèv lekòl nan Eta New York la.

Ak tout kè mwen,

David Abrams

Sa ki genyen nan tiliv sa a

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Entwodiksyon

An Mas 2005, Komite pou Regents (*Board of Regents*) an te adopte yon nouvo Estanda pou Aprann nan Matematik, epi li te mete sou pye yon Pwogram Etid Debaz pou Matematik revize, ki vin kreye bezwen pou devlopman ak entwodiksyon pwogresif pou twa nouvo Egzamen Regents Matematik sa yo: Aljèb Entegre, Jeyometri, ak Aljèb 2/Trigonometri. Nouvo Egzamen Regents pou matematik la pral ranplase Egzamen Regents ki genyen koulyeya pou Matematik A ak Matematik B. Pou ranpli kondisyon ki genyen pou matematik pou yon elèv diplome, elèv yo dwe reyisi nenpòt nan nouvo nivo debitan nan Egzamen Regents lan. Yap bay Egzamen Regents nan Aljèb Entegre pou lapremyè fwa an Jen 2008, Jeyometri an Jen 2009, epi Aljèb 2/Trigonometri an Jen 2010. Pwogram Etid Debaz pou Matematik la (ki te revize an 2005) gen ladan tout enfòmasyon ki pral baze Egzamen Regents nan Aljèb Entegre la.

Modèl Egzamen ki gen pou Egzamen Regents nan Aljèb Entegre bay egzanp sou kalite kesyon ki pral genyen nan egzamen nou prepare yo. Gid sou fason pou korije ak pou bay nòt (*scoring guide*) nan modèl la gen ladan egzanp repons elèv yo bay nan egzamen yo pran nan anviwonman edikasyonèl ak pwen ki pèmèt pou chak repons.

Fèy referans la te ajoute nan Modèl egzamen an pral sèvi kòm yon pati nan tiliv egzamen an. Chak elèv dwe genyen yon kalkilatè (kalkilatris) pou fè graf pou li itilize pou tèt li sèlman pandan egzamen an. Elèv yo pa gen dwa itilize kalkilatè ki kapab fè manipilasyon senbòl oswa ki kapab itilize sansè enfrawouj pou kominike ak lòt kalkilatè.

Ou kapab fè kopi modèl la pou itilize nan klas ou yo.

The University of the State of New York

EGZAMEN REGENTS POU HIGH SCHOOL
(*REGENTS HIGH SCHOOL EXAMINATION*)

ALJÈB ENTEGRE
MODÈL EGZAMEN
OTÒN 2007

ESPLIKASYON JENERAL POU ELÈV LA

Reponn tout 39 kesyon ki genyen nan egzamen sa a. Nou ajoute yon fèy referans, ou kapab bezwen pou reponn kèk nan kesyon ki gen nan egzamen sa a.

Nou pap bay okenn pwen pasyèl nan seksyon chwa miltip la, Pati I an. Make repons ou yo nan espas nou kite nan fèy apa nou bay pou repons pou Pati I an.

Pou Pati II, III ak IV, montre klèman etap ki nesesè yo, montre sibstitisyon ki fèt nan fòmil yo, chema yo, graf yo, tablo yo, eksetera. Pou tout kesyon ki nan pati sa yo, tout repons nimerik korèk ki pa montre travay ki te fèt, ap resevwa 1 pwen sèlman.

Si ou itilize yon kalkilatè (kalkilatris) pou fè graf pou reponn yon kesyon ki gen graf ladan l nan Pati II, III oswa IV, nou atann pou w montre travay sa yo:

1) **Yon chema ti ekran pou wè kalkil yo**
2) **Echèl ki montre aks x yo ak aks y yo**
3) **Make non entèseksyon (entèsepte) x ak y yo epi pwen entèseksyon yo klèman, si yo nesesè pou solisyon an.**

Pati I

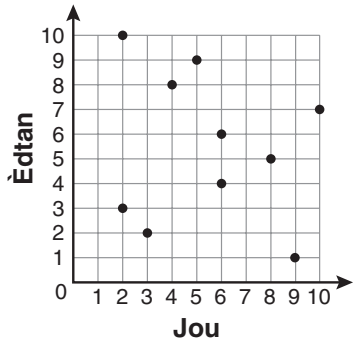
Reponn tout kesyon ki genyen nan pati sa a. Chak repons kòrèk pral resevwa 2 pwen. Nou pap bay okenn pwen pasyèl. Pou chak kesyon, ekri sou fèy apa yo bay pou repons yo chif ki vini anvan mo oswa espresyon ki fin konplete fraz la oswa reponn kesyon an. [60]

Itilize espas sa a pou fè kalkil yo.

1 Pandan 10 jou, Romero te kenbe yon dosye sou kantite èdtan li te pase ap koute mizik. Nou montre enfòmasyon an nan tablo ki pi ba la a.

Jou	1	2	3	4	5	6	7	8	9	10
Èdtan	9	3	2	6	8	6	10	4	5	2

Kiyès nan graf ak pwen yo ki montre done Romero yo grafikman?



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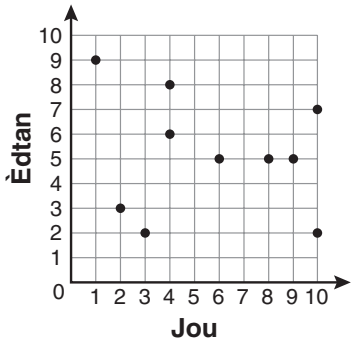

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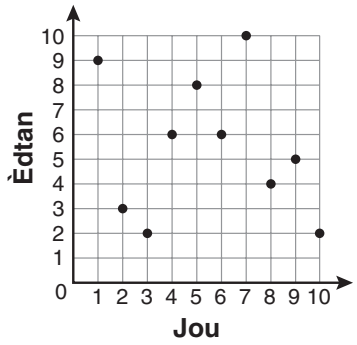

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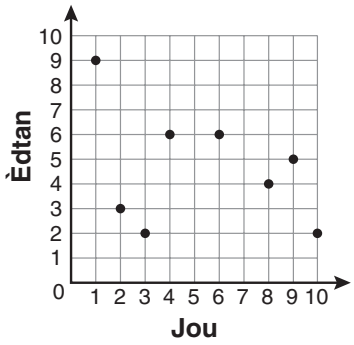


(4)

Itilize espas sa a pou fè kalkil yo.

2 Pandan tout listwa, anpil moun te kontribye nan devlopman matematik. Nan matematisyen sa yo gen, Pythagoras, Euclid, Hypatia, Euler, Einstein, Agnesi, Fibonacci, ak Pascal. Ki pwobabilite ki genyen pou non yon matematisyen yo chwazi o aza nan sa ki gen non yo sou lis la kòmanse ak swa lèt *E* oswa lèt *A*?

(1) $\frac{2}{8}$ (3) $\frac{4}{8}$

(2) $\frac{3}{8}$ (4) $\frac{6}{8}$

3 Ki espresyon ki reprezante $\frac{\left(2x^3\right)\left(8x^5\right)}{4x^6}$ nan fòm pi senp lan?

(1) x^2 (3) $4x^2$

(2) x^9 (4) $4x^9$

4 Ki notasyon entèval ki reprezante ansanm tout nonm depi 2 jiska 7, kontwole tout nonm yo depi premye a jiska dènye a?

(1) (2,7] (3) [2,7)

(2) (2,7) (4) [2,7]

5 Ki pwopriyete ki ilistre pa ekwasyon $ax + ay = a(x + y)$?

(1) asosyatif (3) distribitif

(2) komitatif (4) idantite

Itilize espas sa a pou fè kalkil yo.

6 Espresyon $x^2 - 16$ la ekivalan a

(1) $(x + 2)(x - 8)$
(2) $(x - 2)(x + 8)$
(3) $(x + 4)(x - 4)$
(4) $(x + 8)(x - 8)$

7 Ki sitiyasyon ki dekri yon korelasyon ki *pa* yon relasyon kòz ak efè?

(1) Kòk la chante, epi Solèy la leve.
(2) Tank ou kondwi plis mileyaj, tank ou bezwen plis gazolin.
(3) Tank mikwowonn lan pi pwisan, tank manje a kwit pi vit.
(4) Tank yon moun kap kouri kouri pi vit, tank moun kap kouri a fini pi vit.

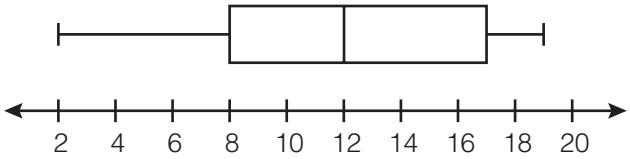
8 Ekwasyon $5x + 2y = 48$ ak ekwasyon $3x + 2y = 32$ reprezante lajan yo kolekte nan vann tikè pou yon konsè kap fèt nan yon lekòl pandan de (2) peryòd klas. Si x reprezante pri chak tikè granmoun epi y reprezante pri chak tikè elèv, konbyen chak tikè granmoun koute?

(1) \$20
(2) \$10
(3) \$8
(4) \$4

Itilize espas sa a pou fè kalkil yo.

9 Ansanm done 5, 6, 7, 8, 9, 9, 9, 10, 12, 14, 17, 17, 18, 19, 19 la reprezante kantite èdtan elèv nan yon klas matematik pase sou Entènèt la nan yon semenn. Ki kazye, nan chema ki fèt an ti kazye yo, ki reprezante done a?

(1)



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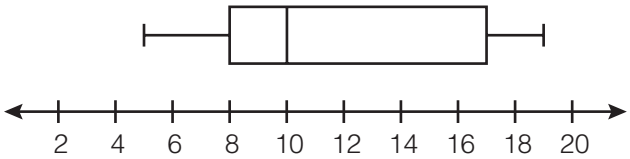

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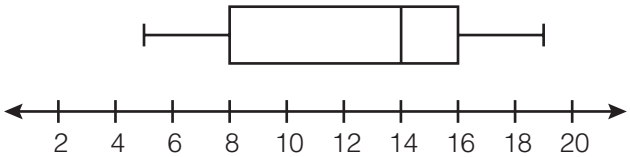

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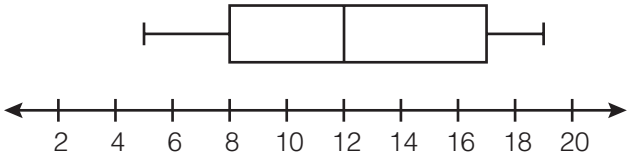


10 Etan done:

Ansanm $A = \{(-2,-1), (-1,0), (1,8)\}$

Ansanm $B = \{(-3,-4), (-2,-1), (-1,2), (1,8)\}$.

Kisa ki entèseksyon ansanm A ak ansanm B?

(1) $\{(1,8)\}$

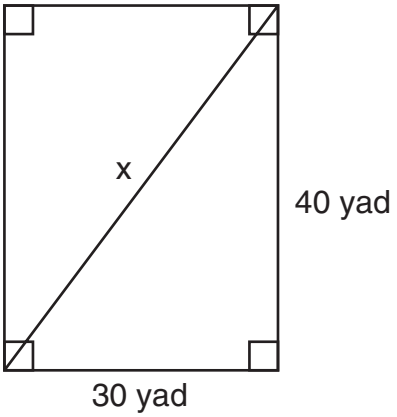
(2) $\{(-2,-1)\}$

(3) $\{(-2,-1), (1,8)\}$

(4) $\{(-3,-4), (-2,-1), (-1,2), (-1,0), (1,8)\}$

Itilize espas sa a pou fè kalkil yo.

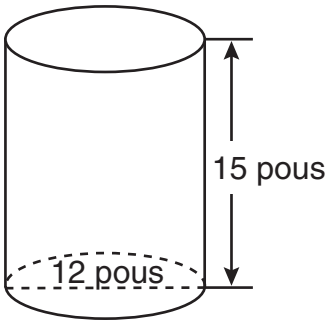
11 Tanya kouri dyagonalman atravè yon teren rektangilè ki gen yon longè 40 yad epi yon lajè 30 yad menm jan yo montre nan chema ki pi ba la.



Ki longè dyagonal Tanya kouri a genyen an yad?

(1) 50
(2) 60
(3) 70
(4) 80

12 Yon kontennè silendrik gen yon dyamèt ki mezire 12 pous epi yon wotè ki mezire 15 pous menm jan chema ki pi ba la a ilistre a.



(kontenè pa desinen
dapre vrè dimansyon yo)

Ki volim kontennè sa a an pous kibik kalkile a *prèske yon dizyèm*?

(1) 6,785.8
(2) 4,241.2
(3) 2,160.0
(4) 1,696.5

Itilize espas sa a pou fè kalkil yo.

13 Kisa ki yon ekwasyon pou liy ki pase nan mitan kowòdone (2,0) ak (0,3)?

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

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

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

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

14 Kiyès nan sitiyasyon yo dwe itilize done bivarye pou analize li?

(1) Madmwazèl Saleem kenbe yon lis sou kantite tan pitit fi li pase ap fè devwa syans sosyal li.

(2) Mesye Benjamin eseye wè si nimewo soulye elèv li yo gen rapò dirèk ak wotè elèv yo.

(3) Mesye DeStefan anrejistre pi bon pwen kliyan li yo reyalize nan jwèt videyo pandan ete a.

(4) Mesye Chan kenbe yon dosye sou nòt pitit fi li fè nan aljèb pandan premye trimès la.

15 Yon boutik elektwonik vann aparèy DVD ak telefòn sanfil. Boutik la fè yon pwofi $75 sou chak aparèy DVD ($d$) li vann; epi yon pwofi $30 sou chak telefòn sanfil (c) li vann. Boutik la vle fè yon pwofi ki omwen $255.00 nan vann aparèy DVD ak telefòn sanfil. Ki inegalite ki dekri sitiyasyon sa a?

(1) $75d + 30c < 255$

(2) $75d + 30c \leq 255$

(3) $75d + 30c > 255$

(4) $75d + 30c \geq 255$

Itilize espas sa a pou fè kalkil yo.

16 Ki pant liy lan ki gen pwen (3,4) ak (–6,10)?

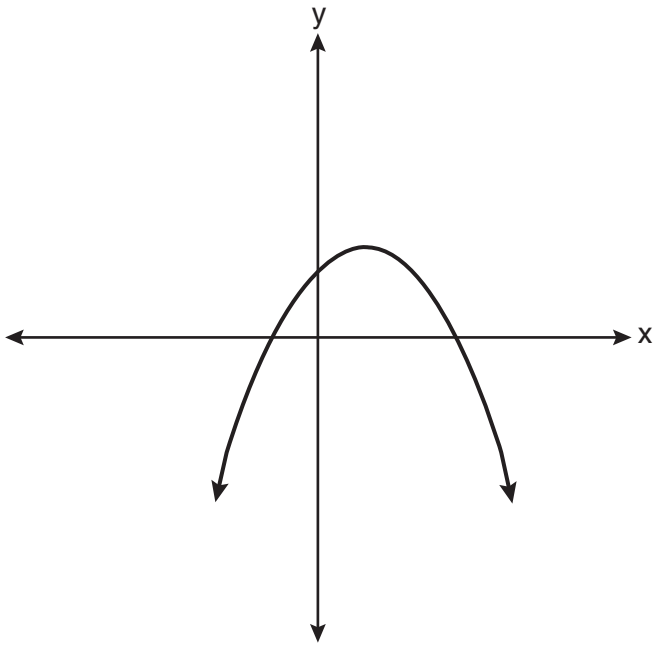
(1) $\frac{1}{2}$

(2) 2

(3) $-\frac{2}{3}$

(4) $-\frac{3}{2}$

17 Ki kalite graf yo montre nan chema ki pi ba la a?



(1) valè absoli

(2) esponansyèl

(3) lineyè

(4) kwadratik

Itilize espas sa a pou fè kalkil yo.

18 Espresyon $\frac{9x^4 - 27x^6}{3x^3}$ ekivalan a

(1) $3x(1 - 3x)$

(2) $3x(1 - 3x^2)$

(3) $3x(1 - 9x^5)$

(4) $9x^3(1 - x)$

19 Daniel's Print Shop te achte yon nouvo enprimant pou $35,000. Chak ane li depresye (pèdi valè) a yon to ki 5%. Apeprè ki valè lap genyen nan fen katriyèm ane a?

(1) $33,250.00

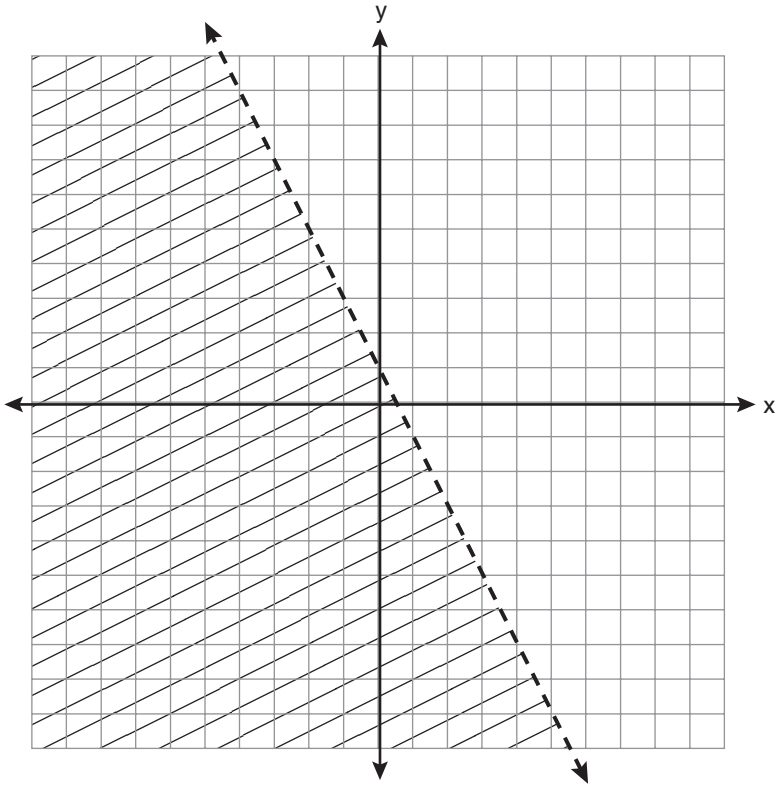
(2) $30,008.13

(3) $28,507.72

(4) $27,082.33

Itilize espas sa a pou fè kalkil yo.

20 Ki inegalite graf ki pi ba la a reprezante?



(1) $y < 2x + 1$

(2) $y < -2x + 1$

(3) $y < \frac{1}{2}x + 1$

(4) $y < -\frac{1}{2}x + 1$

21 Nan triyang MCT, dimansyon $\angle T = 90°$, $MC = 85$ cm, $CT = 84$ cm, epi $TM = 13$ cm. Ki pwopòsyon ki reprezante sinis $\angle C$?

(1) $\frac{13}{85}$

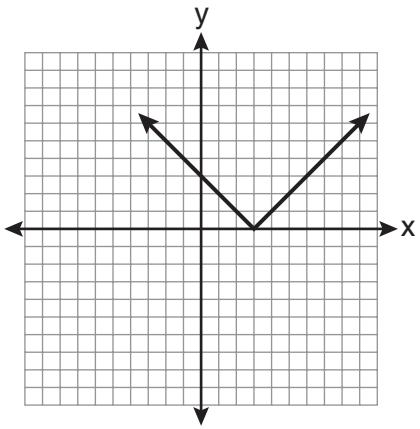
(2) $\frac{84}{85}$

(3) $\frac{13}{84}$

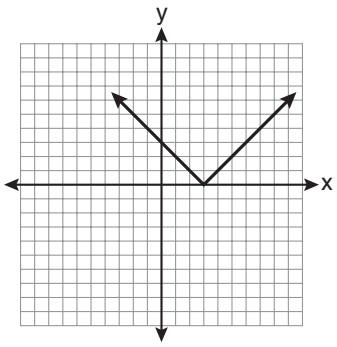
(4) $\frac{84}{13}$

Itilize espas sa a pou fè kalkil yo.

22 Chema ki pi ba la a montre graf $y = |x - 3|$.



Ki chema ki montre graf $y = -|x - 3|$?



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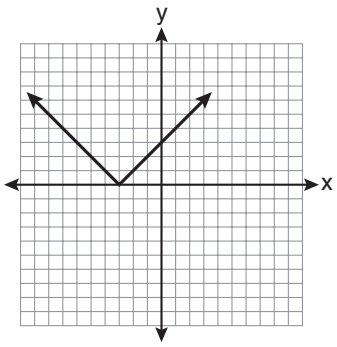

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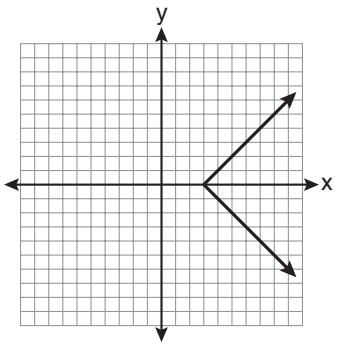

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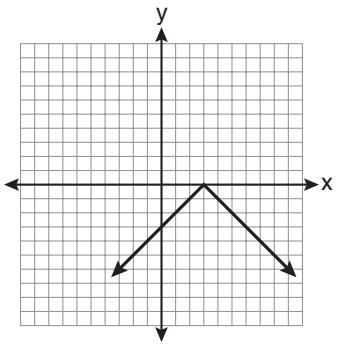


(4)

Itilize espas sa a pou fè kalkil yo.

23 Jeran lakou a ap ranplase gazon sou yon teren football. Dimansyon li yo lè li mesire teren an se 130 yad pa 60 yad. Vrè dimansyon yo se 120 yad pa 54 yad. Ki espresyon ki reprezante erè relatif nan mezi a?

(1) $\dfrac{(130)(60)-(120)(54)}{(120)(54)}$

(2) $\dfrac{(120)(54)}{(130)(60)-(120)(54)}$

(3) $\dfrac{(130)(60)-(120)(54)}{(130)(60)}$

(4) $\dfrac{(130)(60)}{(130)(60)-(120)(54)}$

24 Ki valè x ki nan ansanm solisyon inegalite a $-2x + 5 > 17$?

(1) –8
(2) –6
(3) –4
(4) 12

25 Kisa ki kosyan 8.05×10^6 ak 3.5×10^2?

(1) 2.3×10^3
(2) 2.3×10^4
(3) 2.3×10^8
(4) 2.3×10^{12}

26 Longè yon fenèt rektangilè se 5 pye pi plis pase lajè li, w. Sifas fenèt la se 36 pye kare. Ki ekwasyon yo ta ka itilize pou jwenn dimansyon fenèt la?

(1) $w^2 + 5w + 36 = 0$
(2) $w^2 - 5w - 36 = 0$
(3) $w^2 - 5w + 36 = 0$
(4) $w^2 + 5w - 36 = 0$

Itilize espas sa a pou fè kalkil yo.

27 Ki sòm $\frac{d}{2}$ ak $\frac{2d}{3}$ esprime nan fòm ki pi senp lan?

(1) $\frac{3d}{5}$

(2) $\frac{3d}{6}$

(3) $\frac{7d}{5}$

(4) $\frac{7d}{6}$

28 Pou ki valè x $\frac{x-3}{x^2-4}$ pa defini?

(1) –2

(2) 0

(3) 3

(4) 4

29 Ki espresyon vèbal ki reprezante $2(n-6)$?

(1) de fwa n mwens sis

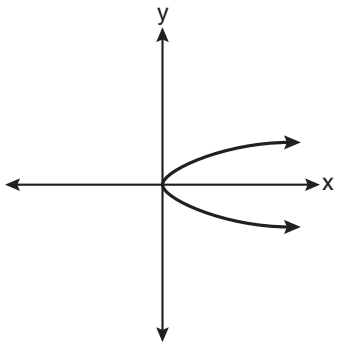
(2) de fwa sis mwens n

(3) de fwa kantite n lan pi piti pase sis

(4) de fwa kantite sis la pi piti pase n

Itilize espas sa a pou fè kalkil yo.

30 Kiyès graf ki reprezante yon fonksyon?



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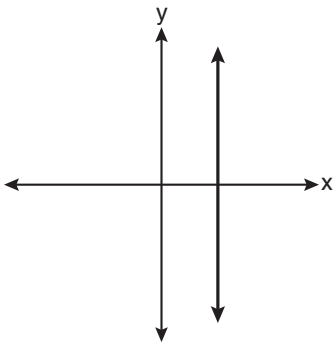
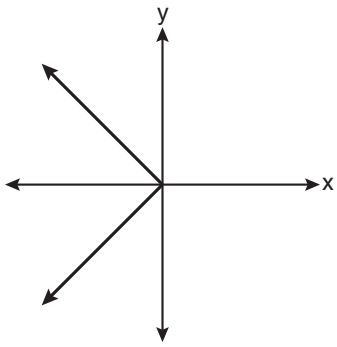
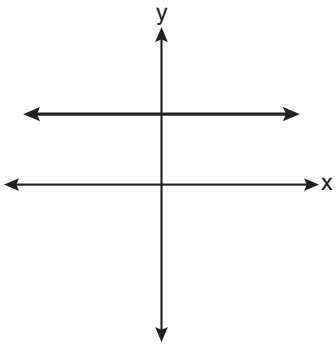


(3)



(2)



(4)

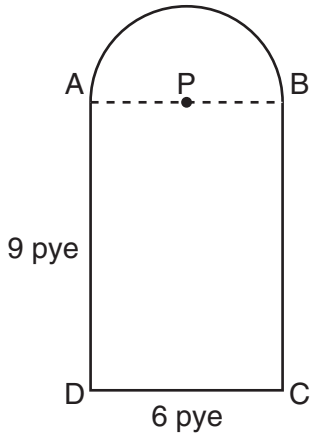
Pati II

Reponn tout kesyon ki genyen nan pati sa a. Chak repons kòrèk pral resevwa 2 pwen. Montre klèman etap ki nesesè yo, montre sibstitisyon ki fèt nan fòmil yo, chema yo, graf yo, tablo yo, eksetera. Pou tout kesyon ki nan pati sa a, tout repons nimerik korèk ki pa montre travay ki te fèt, ap resevwa 1 pwen sèlman. [6]

31 Esprime $5\sqrt{72}$ an fòm radikal ki pi senp lan.

32 Fè solisyon pou g: $3 + 2g = 5g - 9$

33 Jaden Serena a se yon rektang ki fèmen ak yon demisèk, menm jan yo montre nan chema ki pi ba la a. Segman liy *AB* a se dyamèt demisèk *P* a. Serena vle mete yon kloti toutotou jaden li a.



Kalkile longè kloti Serena bezwen an *prè yon dizyèm yon pye*.

Pati III

Reponn tout kesyon ki genyen nan pati sa a. Chak repons kòrèk pral resevwa 3 pwen. Montre klèman etap ki nesesè yo, montre sibstitisyon ki fèt nan fòmil yo, chema yo, graf yo, tablo yo, eksetera. Pou tout kesyon ki nan pati sa a, tout repons nimerik korèk ki pa montre travay ki te fèt, ap resevwa 1 pwen sèlman. [9]

34 Hannah te fè yon vwayaj pou l al vizite kouzen li. Li te kondwi 120 mil pou li rive kay kouzen an epi menm distans lan pou li te tounen lakay li.

Li te pran li 1.2 èdtan pou l te fè lamwatye wout pou l ale kay kouzen an. Ki vitès an mil alè li te fè an mwayèn pandan premye 1.2 èdtan vwayaj la?

Vitès Hannah te fè an mwayèn an mil alè pandan rès vwayaj pou li te ale kay kouzen li an se te 40 mil alè. Konbyen tan, an èdtan, li te pran li pou li te kondwi pou rès distans lan?

Piske l te pran menm wout la pou l al lakay li, Hannah te kondwi an mwayèn a 55 mil alè. Apre 2 èdtan, machin li te pran pann. A konbyen mil de lakay li li te ye?

35 Yon tikè pou prom nan Smith High School se $120. Tom pral fè chyen vwazen li an mache pou $15 pa semenn pou l ka ekonomize lajan pou tikè a. Si Tom deja ekonomize $22, pandan konbyen semenn ominimòm li dwe fè chyen an mache pou li kapab genyen ase lajan pou l peye pou tikè pou prom lan?

36 Mesye Laub gen twa pitit: 2 tifi (Sue ak Karen) epi yon ti gason (David). Apre chak repa, yo chwazi yon timoun o aza pou lave vesèl.

Si se menm timoun lan yo ka chwazi pou ni manje midi ni dine alafwa, bati yon chema oswa ekri yon lis ki gen tout espas tan yo epi ki yon modèl ki reprezante tout rezilta posib sou ki moun ki va lave vesèl apre manje midi ak dine nan samdi.

Detèminen pwobabilite ki genyen pou yon ti gason ak yon tifi lave vesèl apre manje midi ak dine nan samdi.

Pati IV

Reponn tout kesyon ki genyen nan pati sa a. Chak repons kòrèk pral resevwa 4 pwen. Montre klèman etap ki nesesè yo, montre sibstitisyon ki fèt nan fòmil yo, chema yo, graf yo, tablo yo, eksetera. Pou tout kesyon ki nan pati sa a, tout repons nimerik korèk ki pa montre travay ki te fèt, ap resevwa 1 pwen sèlman. [12]

37 Yo montre valè 11 kay nan Washington Street nan tablo ki pi ba la a.

Valè chak kay	Nonb de kay
$100,000	1
$175,000	5
$200,000	4
$700,000	1

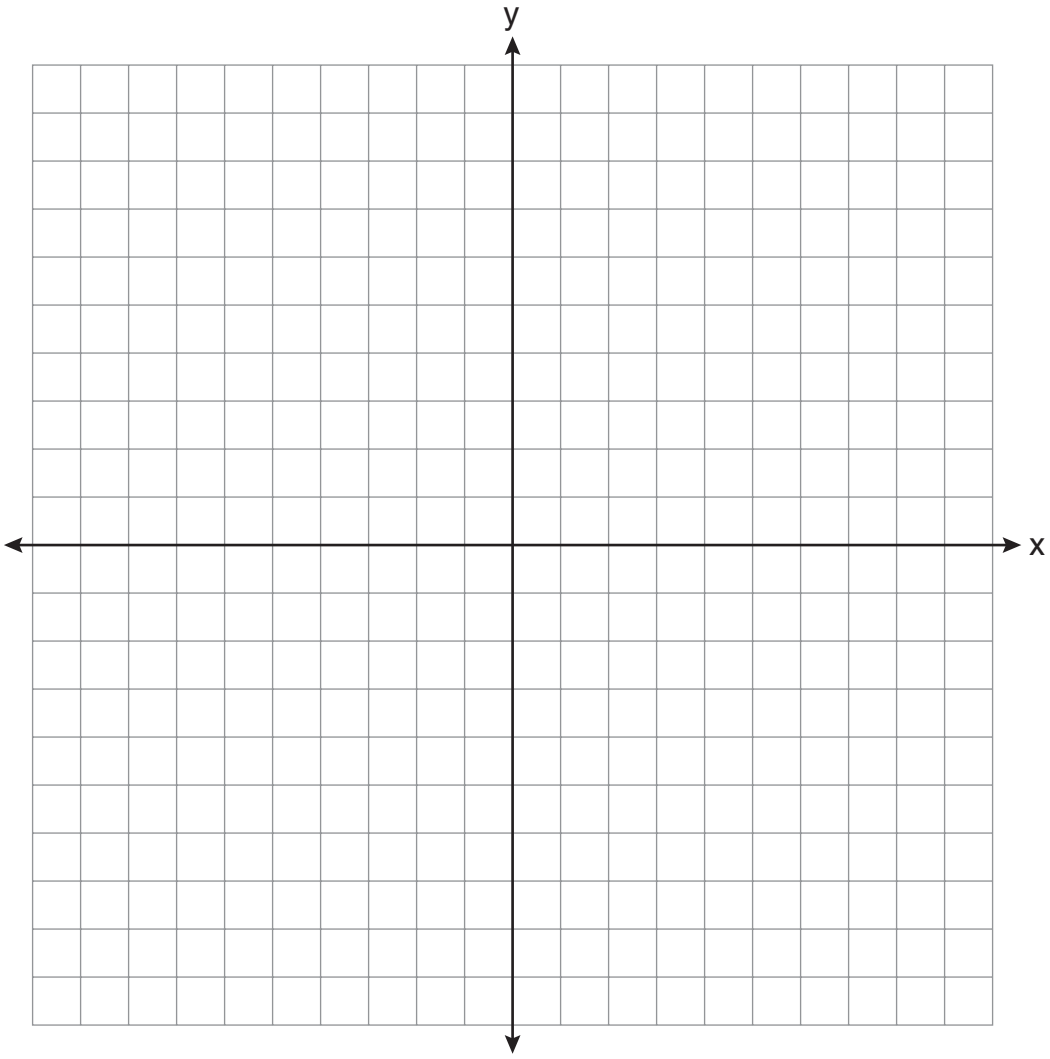
Jwenn valè mwayèn kay sa yo an dola.

Jwenn valè medyàn kay sa yo an dola.

Espesifye ki mezi tandans santral, mwayèn oswa medyàn, ki reprezante *pi byen* valè 11 kay sa yo. Jistifye repons ou an.

38 Fè solisyon sistèm ekwasyon sa yo grafikman, nan ansanm aks ki pi ba la a, epi di kisa ki kowòdone pwen (yo) ki nan ansanm solisyon an.

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



39 Fè solisyon pou x: $\dfrac{x+1}{x} = \dfrac{-7}{x-12}$

Fèy pou Referans

Pwopòsyon Trigonometrik	sinis A = $\frac{opoze}{ipoteniz}$ kosinis A = $\frac{adjasan}{ipoteniz}$ tanjant A = $\frac{opoze}{adjasan}$

Sifas	trapèz $A = \frac{1}{2}h(b_1 + b_2)$

Volim	silenn $V = \pi r^2 h$

Sipèfisi	prism rektangilè $SA = 2lw + 2hw + 2lh$ silenn $SA = 2\pi r^2 + 2\pi rh$

Kowòdone Jeyometrik	$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

Papye bouyon pou graf — Nou *pap* bay nòt pou fèy sa a.

Papye bouyon pou graf — Nou *pap* bay nòt pou fèy sa a.

The University of the State of New York

EGZAMEN REGENTS POU HIGH SCHOOL

(***REGENTS HIGH SCHOOL EXAMINATION***)

ALJÈB ENTEGRE MODÈL EGZAMEN

Otòn 2007

FÈY REPONS

Elèv . . . . . Sèks: ❑ Gason ❑ Fi Klas . . . . . .

Pwofesè . . . . . Lekòl . . . . . .

Ou dwe ekri repons ou bay pou Pati I an nan fèy pou repons sa a.

Pati I

Reponn tout 30 kesyon ki genyen nan pati sa a.

1	9	17	25 . . . . .
2	10	18	26 . . . . .
3	11	19	27 . . . . .
4	12	20	28 . . . . .
5	13	21	29 . . . . .
6	14	22	30 . . . . .
7	15	23	
8	16	24	

SAMPLE

Ou dwe ekri repons ou bay pou Pati II, III ak IV yo nan tiliv egzamen an.

Ou dwe siyen deklarasyon ki pi ba la a lè w fin fè egzamen an nèt.

Mwen fè konnen, lè egzamen sa a fin fèt, mwen pat okouran kesyon oswa repons yo pa mwayen ilegal anvan egzamen an epi mwen pat bay ni mwen pat resevwa asistans pou mwen reponn okenn nan kesyon yo pandan egzamen an.

_____

Siyati

INTEGRATED ALGEBRA TEST SAMPLER			
Question	Maximum Credit	Credits Earned	Rater's/Scorer's Initials
Part I 1–30	60		
Part II 31	2		
32	2		
33	2		
Part III 34	3		
35	3		
36	3		
Part IV 37	4		
38	4		
39	4		
Maximum Total	87		
		Total Raw Score	Checked by

Rater's/Scorer's Name (minimum of three)

SAMPLE

Scoring Guide for Integrated Algebra Test Sampler

Answers to multiple-choice questions 1 through 30, and the specific rubrics for open-ended questions 31 through 39, are provided on the following pages. A complete and correct student response is provided for each open-ended question. The response shows one example of how to solve the problem. In most cases there are other acceptable solutions. Other student responses are shown for each score level.

The maximum raw score for the Regents Examination in Integrated Algebra is allocated as follows:

Part I	30 two-credit multiple-choice questions	60 credits
Part II	3 two-credit open-ended questions	6 credits
Part III	3 three-credit open-ended questions	9 credits
Part IV	3 four-credit open-ended questions	12 credits

PART I

(1)	2	(9)	2	(17)	4	(25)	2
(2)	3	(10)	3	(18)	2	(26)	4
(3)	3	(11)	1	(19)	3	(27)	4
(4)	4	(12)	4	(20)	2	(28)	1
(5)	3	(13)	1	(21)	1	(29)	4
(6)	3	(14)	2	(22)	4	(30)	4
(7)	1	(15)	4	(23)	1		
(8)	3	(16)	3	(24)	1		

PART II

(31) Express $5\sqrt{72}$ in simplest radical form.

Rubric

[2] $30\sqrt{2}$, and appropriate work is shown.

[1] Appropriate work is shown, but one computational error is made.

or

[1] Appropriate work is shown, but one conceptual error is made.

or

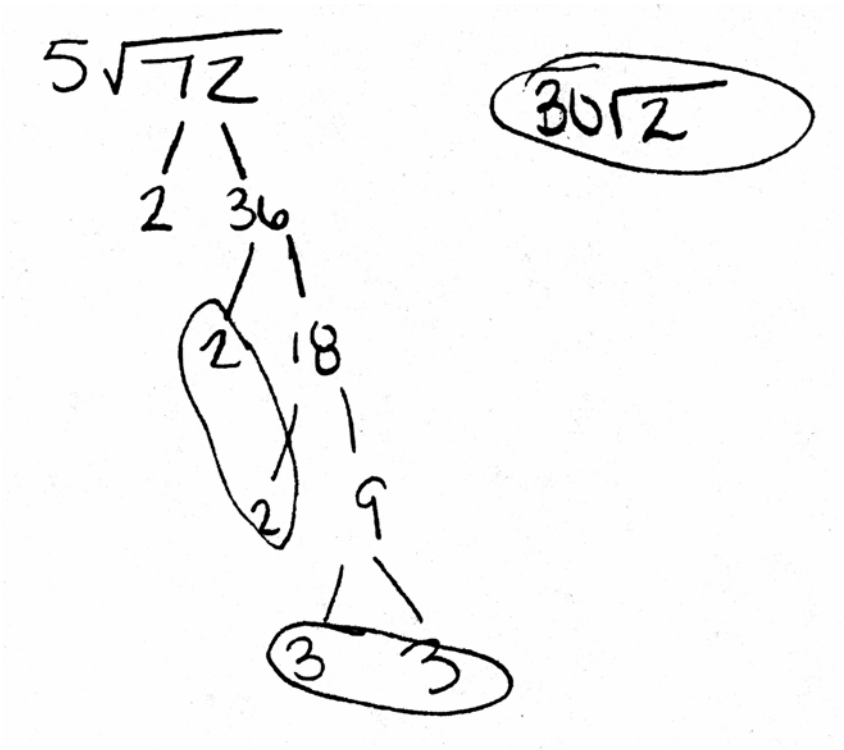
[1] Appropriate work is shown, but the answer is not in simplest radical form.

or

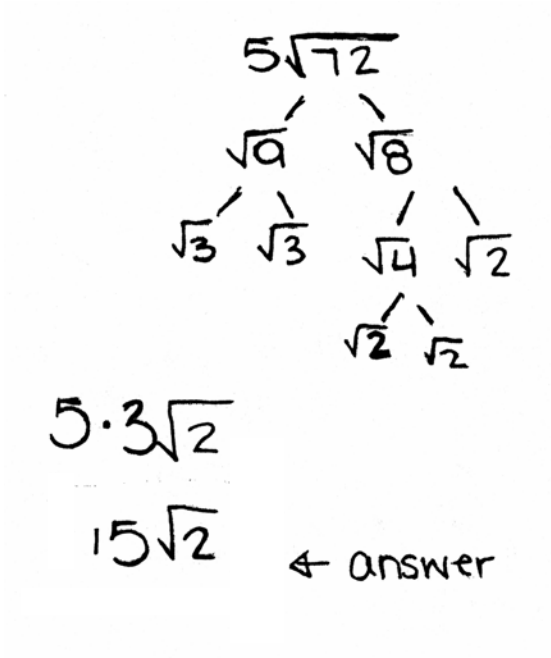
[1] $30\sqrt{2}$, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

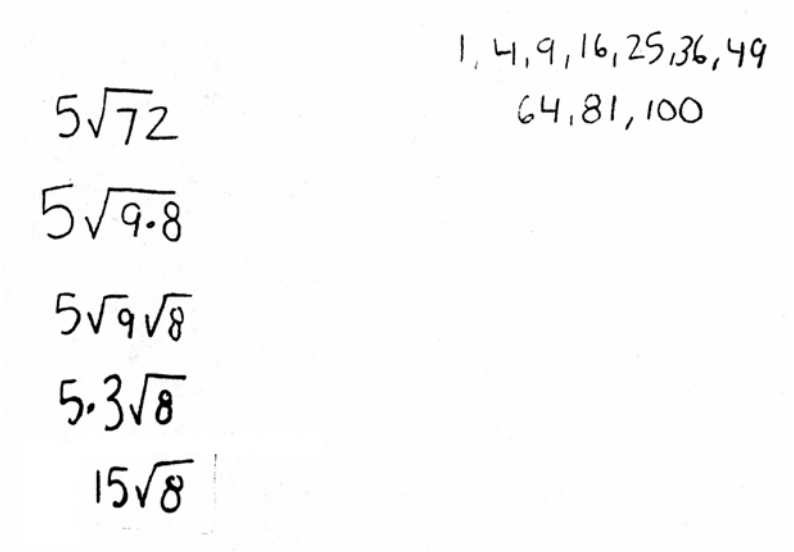
Student work – Score 2



Student work for Item 31 – Score 1



Student work – Score 1



(32) Solve for g: $3 + 2g = 5g - 9$

Rubric

[2] 4, and appropriate work is shown.

[1] Appropriate work is shown, but one computational error is made.

or

[1] Appropriate work is shown, but one conceptual error is made.

or

[1] 4, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Student work – Score 2

$$3 + 2g = 5g - 9$$
$$+9 \qquad\qquad +9$$

$$12 + 2g = 5g$$
$$-2g \quad -2g$$

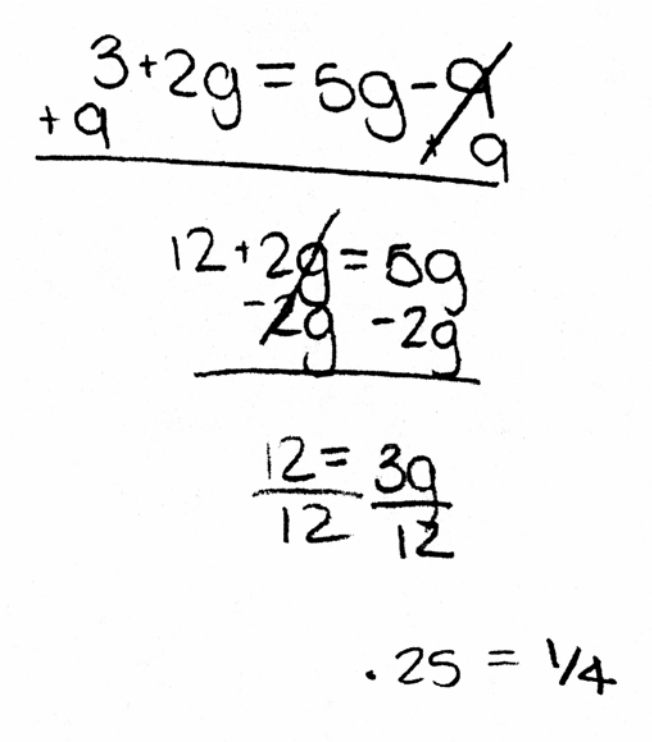
$$\frac{12}{3} = \frac{3g}{3}$$

$$4 = g$$

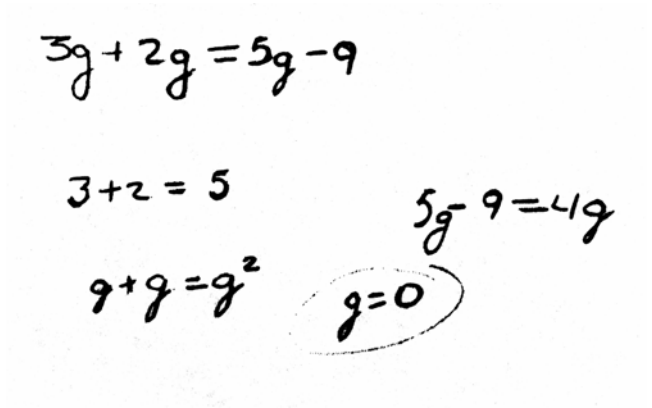
check

$$3 + 2(4) = 5(4) - 9$$
$$3 + 8 = 20 - 9$$
$$11 = 11$$

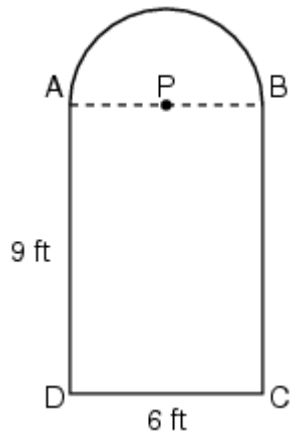
Student work for Item 32 – Score 1



Student work – Score 0



(33) Serena's garden is a rectangle joined with a semicircle, as shown in the diagram below. Line segment *AB* is a diameter of semicircle *P*. Serena wants to put a fence around her garden.



Calculate the length of fence Serena needs to the *nearest tenth of a foot.*

Rubric

[2] 33.4, and appropriate work is shown.

[1] Appropriate work is shown, but one computational or rounding error is made.

or

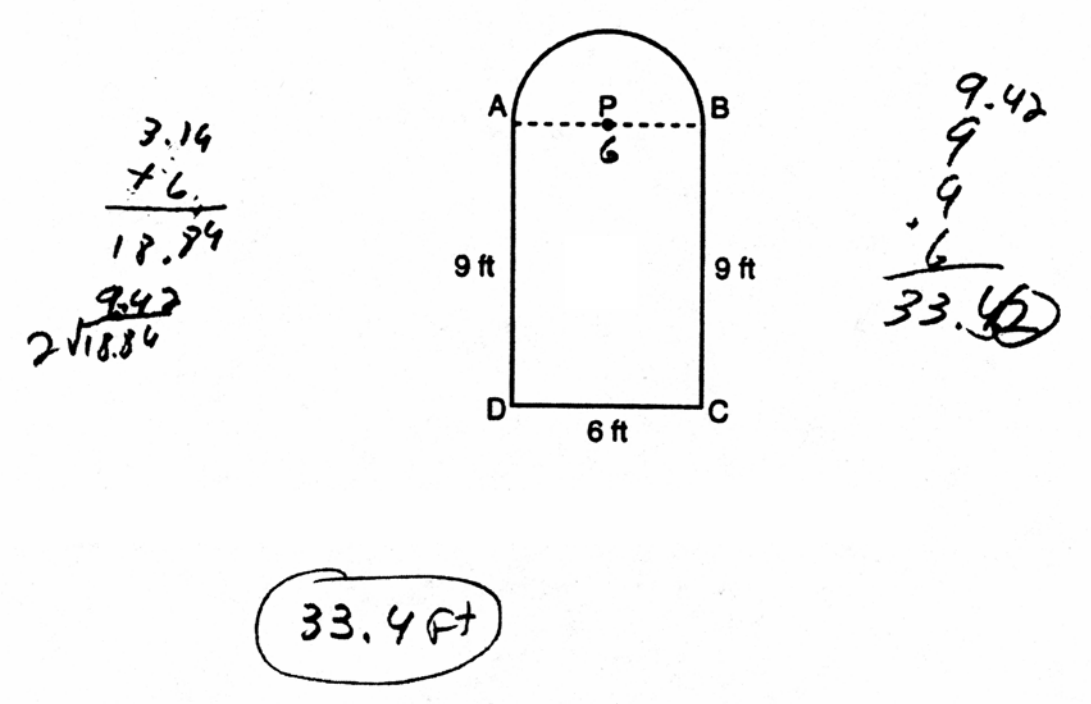
[1] Appropriate work is shown, but one conceptual error is made.

or

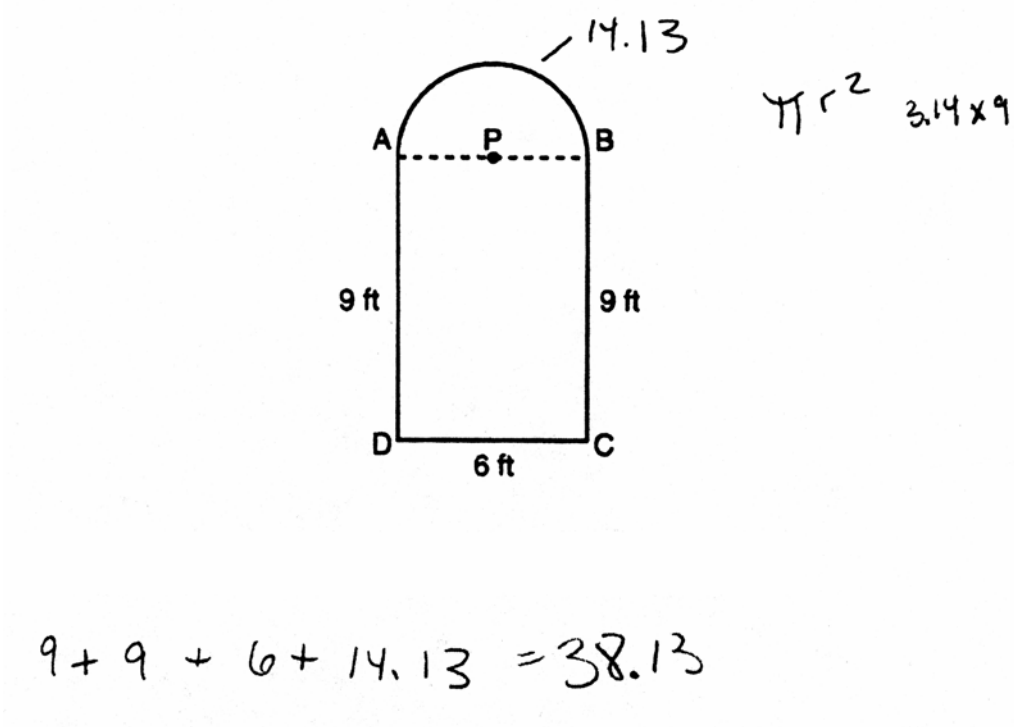
[1] 33.4, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

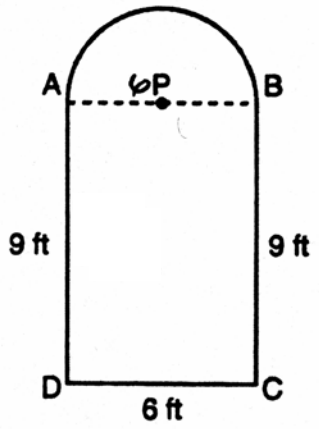
Student work for Item 33 – Score 2



Student work – Score 1



Student work for Item 33 – Score 1



9 + 9 + 6 + 6 = 30 ft + Semi circle

A.C = πd

AC = $\sqrt{18.84}$ 2

AC = 9.42

39.4 ft of fence

PART III

(34) Hannah took a trip to visit her cousin. She drove 120 miles to reach her cousin's house and the same distance back home.

It took her 1.2 hours to get halfway to her cousin's house. What was her average speed, in miles per hour, for the first 1.2 hours of the trip?

Hannah's average speed for the remainder of the trip to her cousin's house was 40 miles per hour. How long, in hours, did it take her to drive the remaining distance?

Traveling home along the same route, Hannah drove at an average rate of 55 miles per hour. After 2 hours her car broke down. How many miles was she from home?

Rubric for Item 34

[3] 50, 1.5, and 10, and appropriate work is shown.

[2] Appropriate work is shown, but one computational error is made.

[1] Appropriate work is shown, but one conceptual error is made.

or

[1] Appropriate work is shown, but two or more computational errors are made.

or

[1] 50, and appropriate work is shown, but no further correct work is shown.

or

[1] 1.5, and appropriate work is shown, but no further correct work is shown.

or

[1] 10, and appropriate work is shown, but no further correct work is shown.

or

[1] 50, 1.5, and 10, but no work is shown.

[0] 50 or 1.5 or 10, but no work is shown.

or

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Student work for Item 34 – Score 3

50 miles an hr
x 2.4
200
+1000
120.0 miles

2.4 hrs For the whole trip
1.2 hrs halfway

1.2)120
50
1.2)60
-60
00

1.2 hrs = 60 mil
2.4 hrs = 120 mil

50 miles
x 1.2 hrs
60 miles

50 miles

1.5 hrs

40 miles / 3 hr trip
1.5 hr trip

1.2 = 50
+40

40
x 3
120 miles

40
x 1.2
8.0
+40.0
48.0

120 miles Total
40 miles
x 1.5
200
+400
60.0

10 miles

55
x 2
110 miles

120
- 110
10 miles

Student work for Item 34 – Score 2

1.2 hrs = 80 mph.

$\frac{62}{2.4}$ = 160 min.

120

$\frac{120}{2.4}$

50

50 mph

60 remaining distance

÷ 40 mph

1.5 hrs

55+62 = 110 miles from home

Student work for Item 34 – Score 1

120 ÷ 2 = 60

60 × 1.2

20

60mph

1.2

2.7 hours

40

1.2 +
1.5

2.7

12

60

60
40
100
20

10miles

1
55
× 2
110

120
−110
10

Student work for Item 34 – Score 1

$\frac{120}{2} = \frac{60}{1:2} = 30$ mph

$1\frac{1}{2}$ hours

10 miles

(35) A prom ticket at Smith High School is $120. Tom is going to save money for the ticket by walking his neighbor's dog for $15 per week. If Tom already has saved $22, what is the minimum number of weeks Tom must walk the dog to earn enough to pay for the prom ticket?

Rubric

[3] 7, and appropriate work is shown, such as solving the inequality $15x + 22 \geq 120$, solving an equation, or trial and error with at least three trials and appropriate checks.

[2] Appropriate work is shown, but one computational or rounding error is made.

or

[2] The trial-and-error method is used to find a correct solution, but only two trials and appropriate checks are shown.

[1] Appropriate work is shown, but two or more computational or rounding errors are made.

or

[1] Appropriate work is shown, but one conceptual error is made.

or

[1] An incorrect equation of equal difficulty is solved appropriately.

or

[1] A correct inequality or equation is written, but no further correct work is shown.

or

[1] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but no solution is found.

or

[1] 7, but no work or only one trial with an appropriate check is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Student work for Item 35 – Score 3

$22 - start
37 - week 1
52 - 2
67 - 3
82 - 4
97 - 5
112 - 6
$127 - 7

goal → $120

7 weeks minimum

Student work – Score 2

Let x = # of weeks

$$15x + 22 \geq 120$$
$$-22 \qquad -22$$

$$\frac{15x}{15} \geq \frac{88}{15}$$

$$x \geq 5.8\overline{6}$$

5 weeks would not be enough.

$$15(5) + 22 =$$
$$75 + 22 = \$97$$

He would have to walk the dog for 6 weeks

Student work for Item 35 – Score 1

$15 p/w

$120 – 8 weeks
$105 – 7 weeks
$90 - 6 weeks

he already had $22

$$\begin{array}{r} 120 \\ -22 \\ \hline 88 \end{array}$$

About 6 wks

Student work – Score 1

no

7 weeks

22

(36) Mr. Laub has three children: two girls (Sue and Karen) and one boy (David). After each meal, one child is chosen at random to wash dishes.

If the same child can be chosen for both lunch and dinner, construct a tree diagram or list a sample space of all the possible outcomes of who will wash dishes after lunch and dinner on Saturday.

Determine the probability that one boy and one girl will wash dishes after lunch and dinner on Saturday.

Rubric

[3] $\frac{4}{9}$, and a correct tree diagram or sample space is shown.

[2] A correct tree diagram or sample space is shown, but no probability or an incorrect probability is given.

or

[2] An incorrect tree diagram or sample space is shown, but an appropriate probability is found.

[1] Appropriate work is shown, but one conceptual error is made.

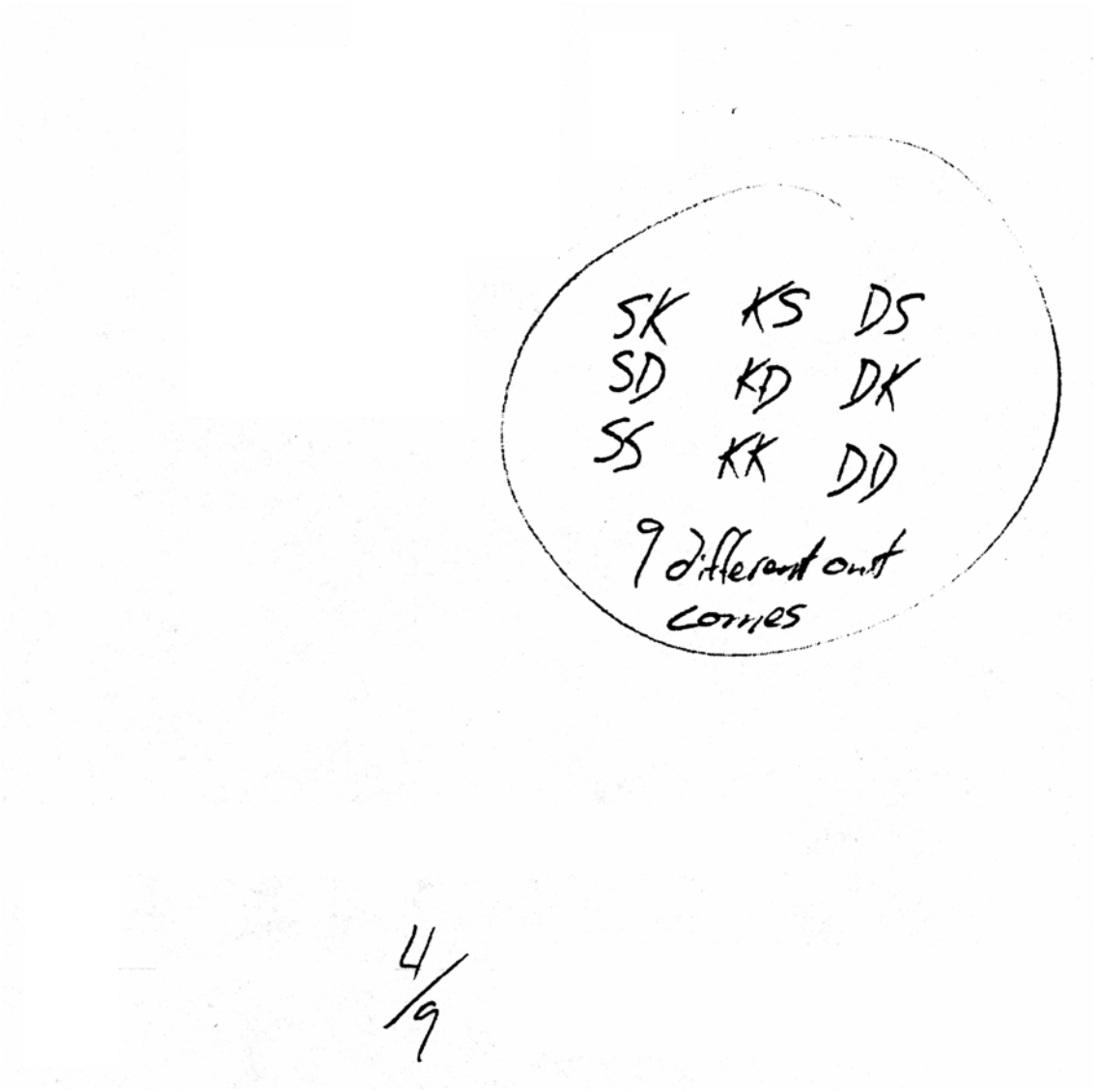
or

[1] $\frac{4}{9}$, but no work is shown.

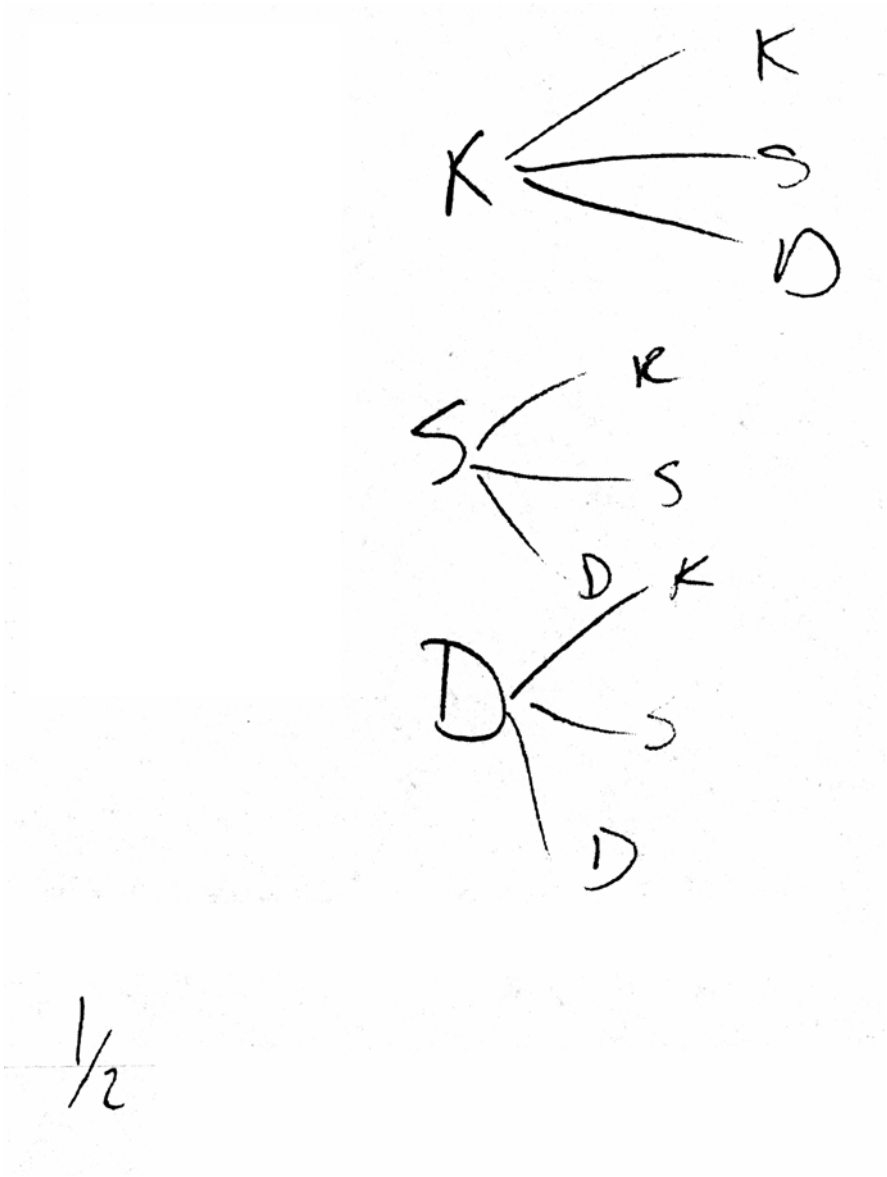
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Student work for Item 36 – Score 3

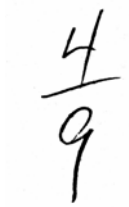
Student work for Item 36 – Score 3



Student work for Item 36 – Score 2



Student work – Score 1



PART IV

(37) The values of 11 houses on Washington St. are shown in the table below.

Value per House	Number of Houses
$100,000	1
$175,000	5
$200,000	4
$700,000	1

Find the mean value of these houses in dollars.

Find the median value of these houses in dollars.

State which measure of central tendency, the mean or the median, *best* represents the values of these 11 houses. Justify your answer.

Rubric for Item 37

[4] Mean = 225,000, median = 175,000, and the median is stated to be the best measure of central tendency, an appropriate justification is given, and appropriate work is shown.

[3] Appropriate work is shown, but one computational error is made, but an appropriate measure of central tendency is stated, and an appropriate justification is given.

or

[3] Mean = 225,000, median = 175,000, and the median is stated to be the best measure of central tendency, but no justification is given.

[2] Appropriate work is shown, but two or more computational errors are made, but an appropriate measure of central tendency is stated, and an appropriate justification is given.

or

[2] Appropriate work is shown, but one conceptual error is made.

or

[2] Appropriate work is shown to find mean = 225,000 and median = 175,000, but no further correct work is shown.

[1] Appropriate work is shown, but one computational error and one conceptual error are made.

or

[1] Mean = 225,000 and median = 175,000, but no further work is shown.

[0] Mean = 225,000 or median = 175,000, but no further work is shown.

or

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Student work for Item 37 – Score 4

$\frac{2475000}{11} = \$225,000$

MEAN

~~100~~, ~~175~~, ~~175~~, ~~175~~, ~~175~~, 175, ~~200~~, ~~200~~, ~~200~~, ~~200~~, ~~700~~

MEDIAN $175,000

MEDIAN IS BEST BECAUSE ONLY 1 HOUSE IS HIGHER THAN THE MEAN!

Student work – Score 3

225000

11) 2475000

$225,000

1222223333 4

$175,000

175,000 because its inbetween the prices

Student work for Item 37 – Score 2

100 +200
+175 +100
2475

=225000
11) 2475000

$225000

$175,000

The average or the mean best represents the values of these 11 houses because it shows the exact price of the average price, on the other hand the median just takes an estimate.

Student work for Item 37 – Score 1

100,000
875,000
800,000
700,000

mean - average
median - middle
mode - most accuring

~~293,750~~ 5 618,750

The mean value of these houses in dollars is ~~293,750~~ $618,750.

175,000 ~~175,000~~ is the median value of these houses.

?

The reacurring central tendency of those 11 houses is 175,000. ?

~~100,000, 175,000, 175,000, 17.~~

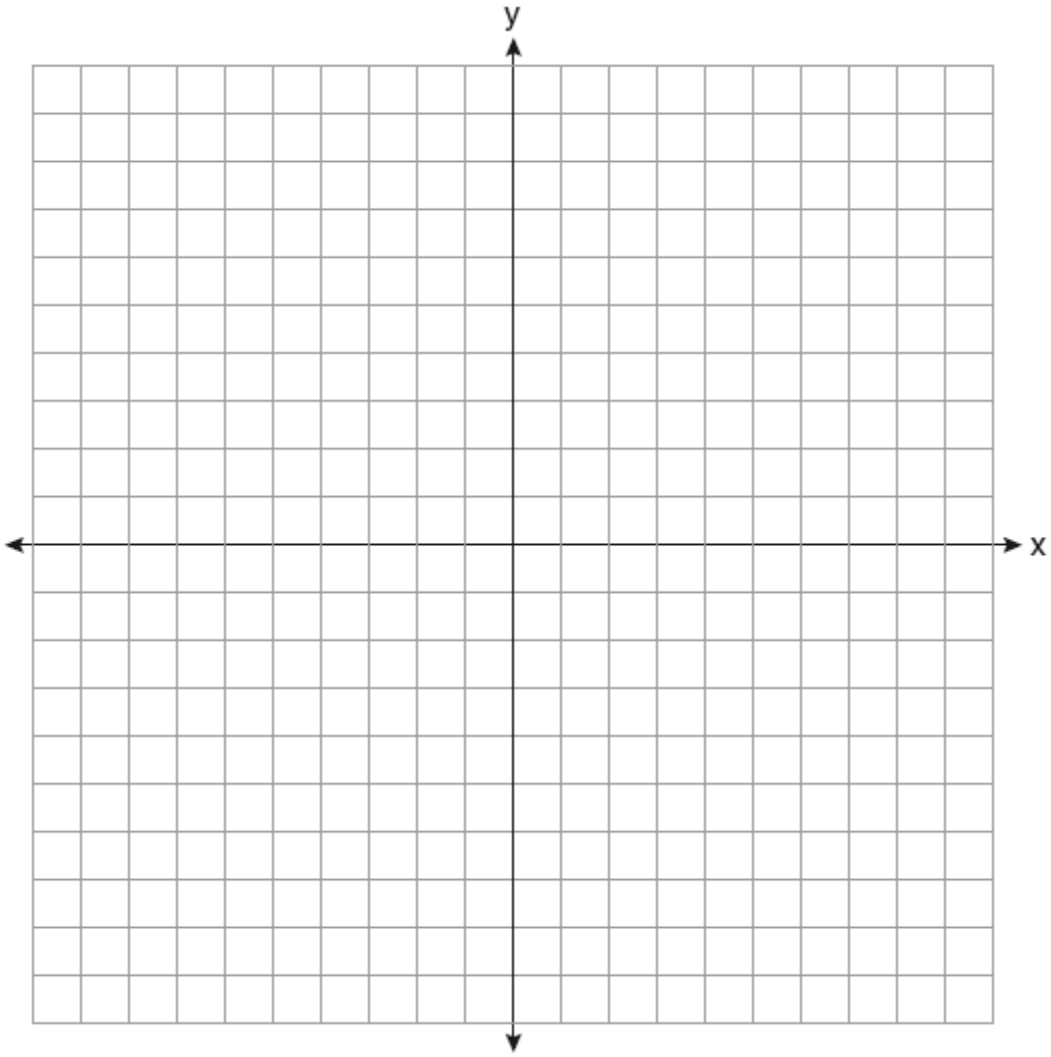
~~100,000~~, ~~175,000~~; ~~175,000~~; ~~175,000~~, ~~175,000~~, ~~175,000~~, ~~200,000~~, ~~200,000~~, ~~200,000~~, ~~200,000~~
~~700,000~~

Student work for Item 37 – Score 1

100,000 / 125,000 / 175,000 / 125,000 / 175,000 / 175,000 / 200,000 / 200,000 / 200

(38) Solve the following systems of equations graphically, on the set of axes below, and state the coordinates of the point(s) in the solution set.

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



Rubric for Item 38

[4] Correct graphs are drawn, and (0,5) and (4,–3) are stated.

[3] Both equations are graphed, but one graphing error is made, but appropriate solutions are stated.

or

[3] Both graphs are drawn correctly, but only one solution is stated.

[2] Both graphs are drawn correctly, but no solutions are stated.

or

[2] Both equations are graphed, but two or more graphing errors are made, but appropriate solutions are stated.

or

[2] Appropriate work is shown to find (0,5) and (4,–3), but a method other than graphing is used.

or

[2] Both equations are graphed, but one conceptual error is made.

[1] Both equations are graphed, but one conceptual error and one graphing error are made.

or

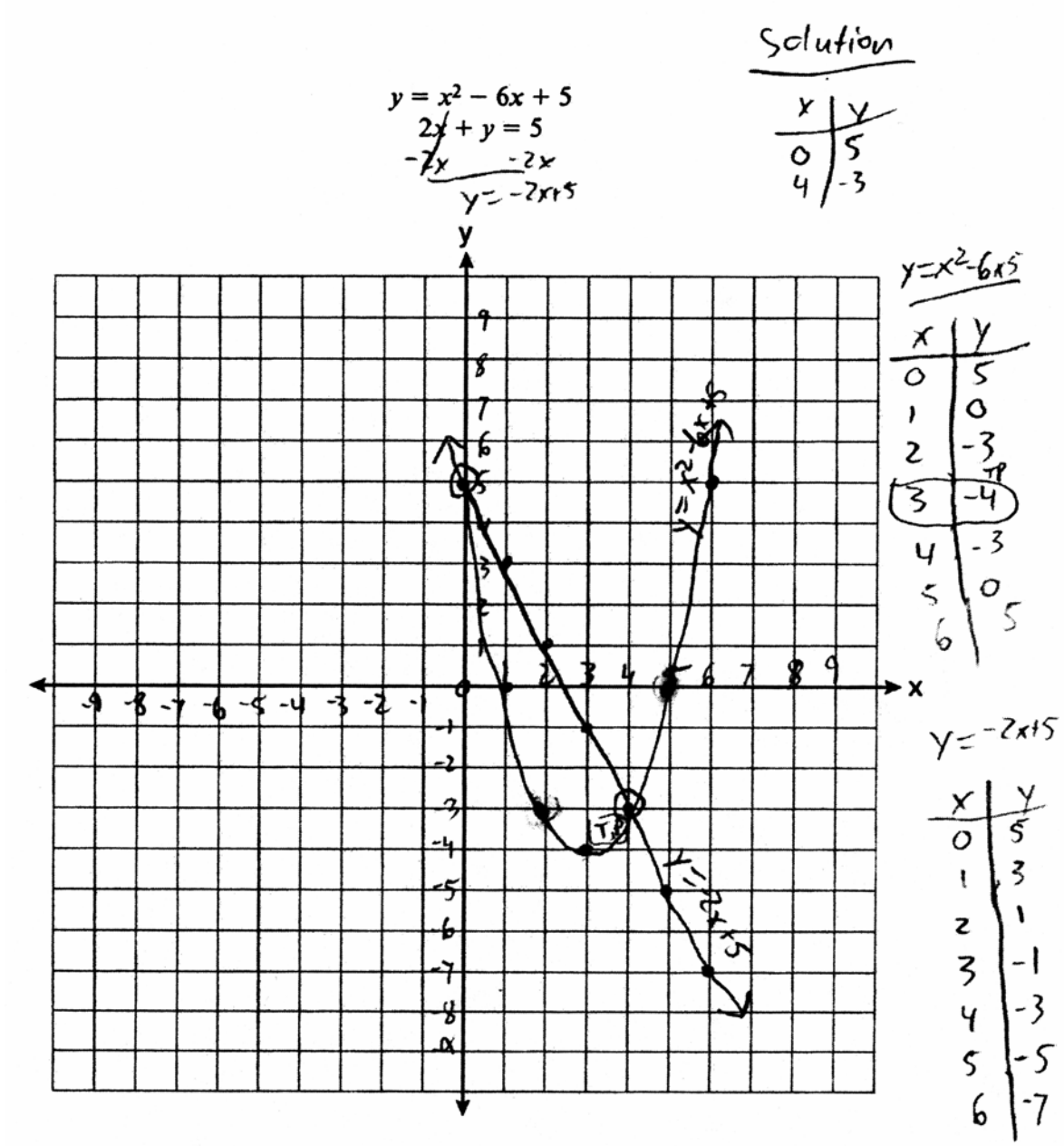
[1] (0,5) and (4,–3) are stated, but no work is shown.

[0] (0,5) or (4,–3) is stated, but no work is shown.

or

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Student work for Item 38 – Score 4



Student work for Item 38 – Score 3

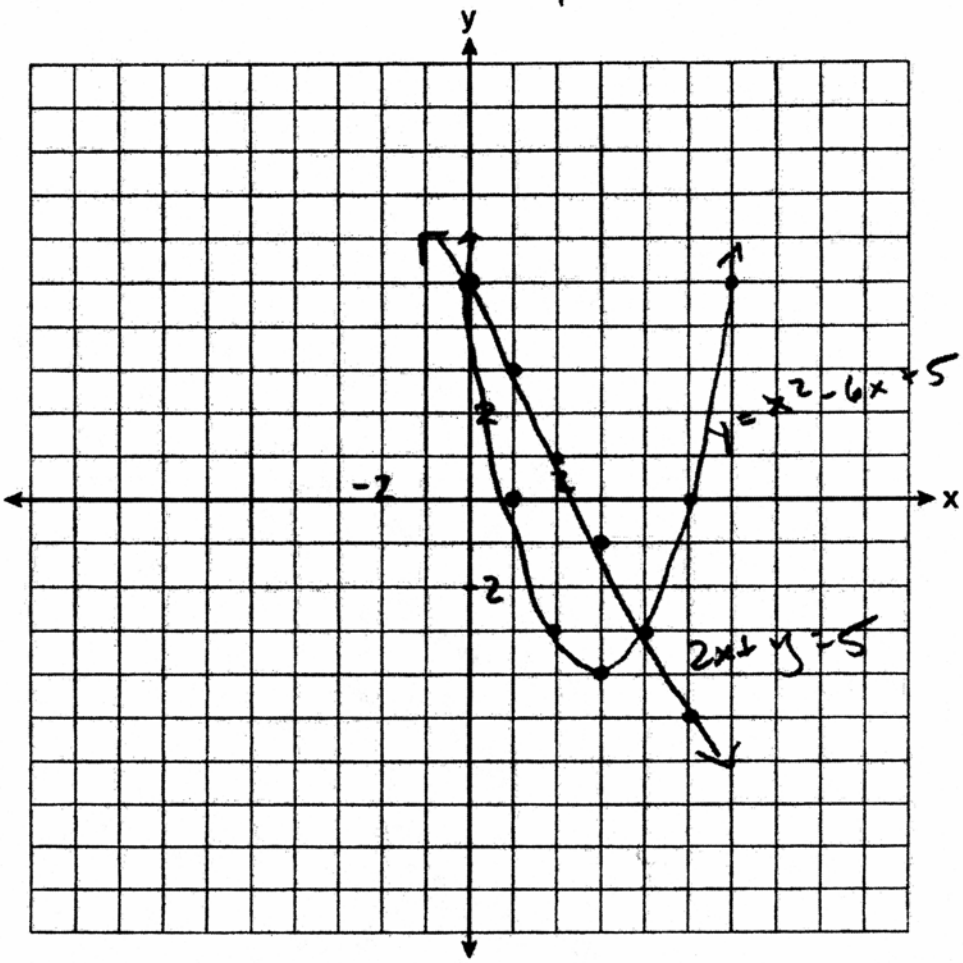
$y = x^2 - 6x + 5$

$2x + y = 5$

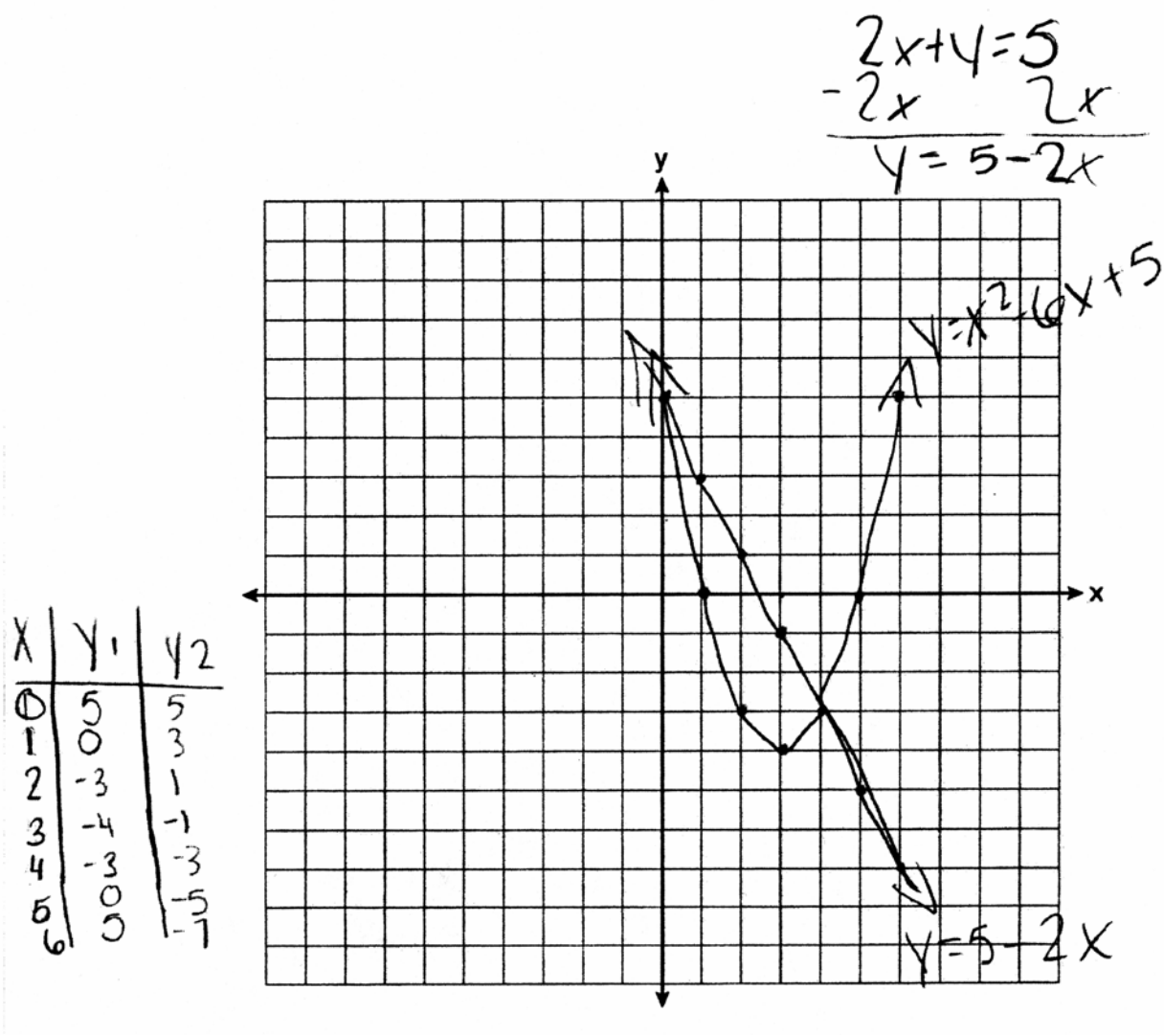
$-2x \quad -2x$

$y = 5 - 2x$

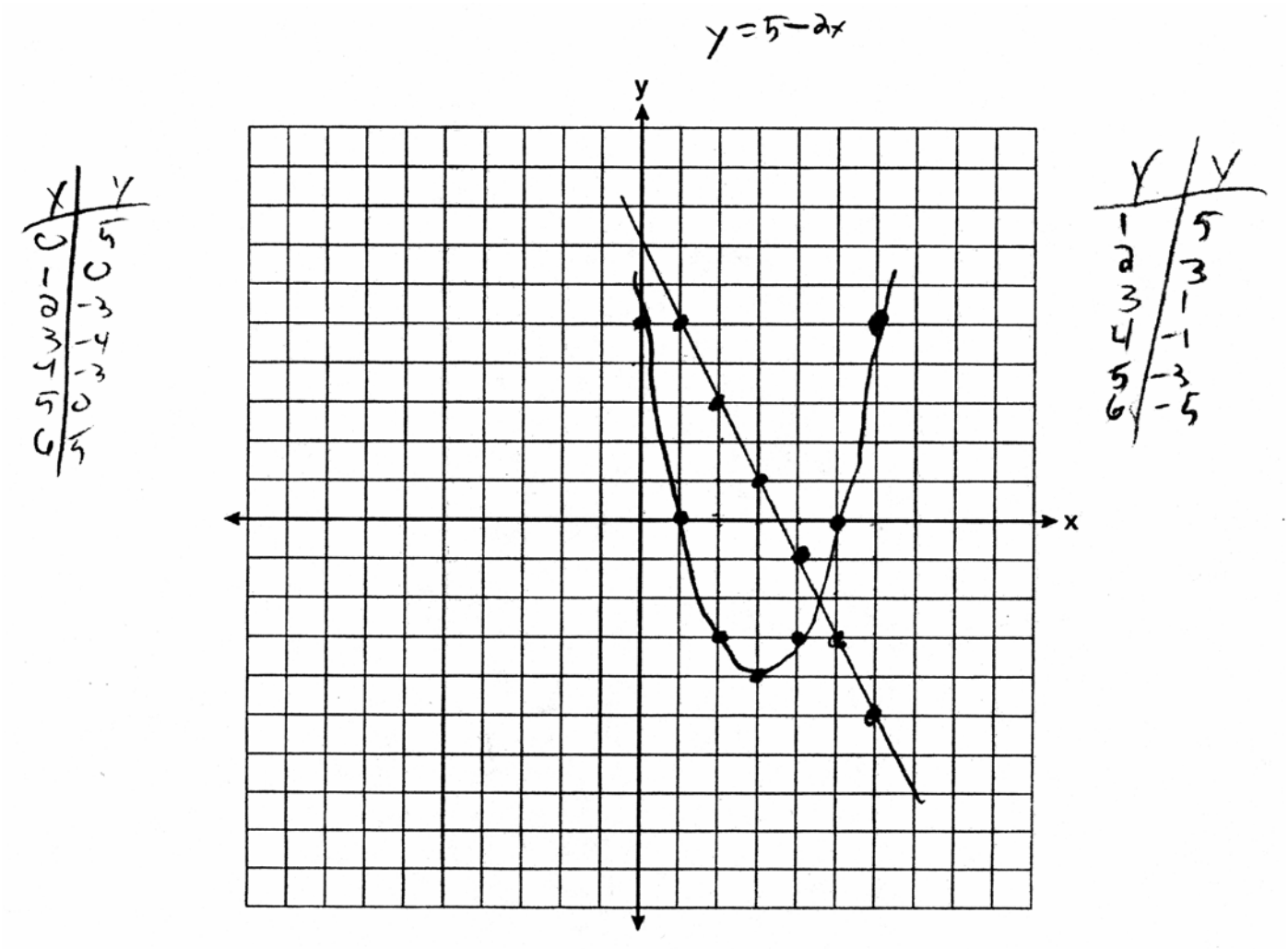
solution = (5,0) & (4,-3)



Student work for Item 38 – Score 2



Student work for Item 38 – Score 1



(39) Solve for x: $\frac{x+1}{x} = \frac{-7}{x-12}$

Rubric for Item 39

[4] 6 and –2, and appropriate work is shown, such as an algebraic solution or trial and error with at least three trials and appropriate checks.

[3] Appropriate work is shown, but one computational or factoring error is made.

or

[3] Appropriate work is shown, but only one solution is found.

[2] The correct quadratic equation is written in standard form.

or

[2] Appropriate work is shown, but two or more computational or factoring errors are made.

or

[2] Appropriate work is shown, but one conceptual error is made.

or

[2] The trial-and-error method is used to find at least one solution, but only two trials and appropriate checks are shown.

or

[2] The trial-and-error method is attempted and at least six systematic trials and appropriate checks are shown, but no solution is found.

or

[2] An incorrect quadratic equation of equal difficulty is solved appropriately.

[1] $x^2 - 11x - 12 = -7x$, but no further correct work is shown.

or

[1] 6 and −2, but no work or only one trial with an appropriate check is shown.

or

[1] An incorrect equation of a lesser degree of difficulty is solved appropriately.

or

[1] Appropriate work is shown, but one conceptual error and one computational or factoring error are made.

[0] 6 or –2, but no work is shown.

or

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

Student work for Item 39 – Score 4

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

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

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

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

$x = \frac{4 \pm \sqrt{(-4)^2 - 4(1)(-12)}}{2}$

$x = \frac{4 \pm \sqrt{64}}{2}$

$x = 6 \quad x = -2$

$x = \frac{-b \pm \sqrt{b^2 - 4(a)(c)}}{2(a)}$

Student work for Item 39 – Score 3

$$\frac{x+1}{x} = \frac{-7}{x-12}$$

$$x + 1 \cdot x - 12 = x \cdot -7$$

$$x^2 + 1x + -12x + -12 = -7x$$

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

$$+7x \qquad +7x$$

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

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

$$x - 6 = 0 \qquad x - 2 = 0$$

$$+6 \; +6 \qquad +2 \; +2$$

$$\boxed{x = 6} \qquad \boxed{x = 2}$$

Student work for Item 39 – Score 2

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

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

$$+7x \qquad +7x$$

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

$$(x-4)(x+3) = 0$$

$$x = 4 \quad \text{or} \quad x = -3$$

Student work – Score 1

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

$$\cancel{x} - 7 = 2x - 11$$

$$-\cancel{x} \qquad -x$$

$$-7 = x - 11$$

$$+11 \qquad +11$$

$$x = 4$$

APPENDICES

Appendix A

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Albany, New York 12234

Specifications for the Regents Examination in Integrated Algebra (First Administration–June 2008)

The questions on the Regents Examination in Integrated Algebra will assess both the content and the process strands of New York State Mathematics Standard 3. Each question will be aligned to one content performance indicator but will also be aligned to one or more process performance indicators, as appropriate for the concepts embodied in the task. As a result of the alignment to both content and process strands, the examination will assess students' conceptual understanding, procedural fluency, and problem-solving abilities rather than assessing knowledge of isolated skills and facts.

There will be 39 questions on the Regents Examination in Integrated Algebra. The table below shows the percentage of total credits that will be aligned with each content strand.

Content Strand	% of Total Credits
1 Number Sense and Operations	6–10%
2 Algebra	50–55%
3 Geometry	14–19%
4 Measurement	3–8%
5 Probability and Statistics	14–19%

Question Types

The Regents Examination in Integrated Algebra will include the following types and numbers of questions:

Question Type	Number of Questions
Multiple choice	30
2-credit open ended	3
3-credit open ended	3
4-credit open ended	3

Calculators

Schools must make a graphing calculator available for the exclusive use of each student while that student takes the Regents Examination in Integrated Algebra.

Appendix B

Map to Learning Standards

The table below shows which content strand each item is aligned to. The numbers in the table represent the question numbers on the test.

Content Strand	Multiple-Choice Item Number	2-Credit Item Number	3-Credit Item Number	4-Credit Item Number
Number Sense and Operations	5, 25	31		
Algebra	3, 4, 6, 8, 10, 11, 13, 15, 16, 18, 19, 21, 24, 26, 27, 28, 29	32	35	39
Geometry	12, 17, 20, 22, 30	33		38
Measurement	23		34	
Probability and Statistics	1, 2, 7, 9, 14		36	37