



Common
Core
Edition

Algebra 1

Answer Keys

Topical Review Book Company

CORRECTION NOTICE – WORKBOOK

Please be advised of the following typographical errors in the *Algebra 1 Workbook*.

Test 2 – Page 10 – Question #11: currently reads:

11. The two-way table below represents the plans for seniors at Grant High School following graduation.

Post-Education Plans			
	Gender		Total
	Boys	Girls	
2 year college	36	28	64
4 year college	52	67	119
military	12	5	17
career	29	13	42
undecided	7	16	23
Total	136	129	265

What is the conditional joint relative frequency of the number of girls planning to attend a 4 year college?

- (1) 11% (2) 14% (3) 20% (4) 25%

The question and answer choices should read as follows:

What is the **conditional relative frequency** of the number of girls planning to attend a 4 year college?

- (1) **25%** (2) **38%** (3) **49%** (4) **52%**

TEST 1

Part I

- | | | | | | |
|------|------|-------|-------|-------|-------|
| 1. 3 | 5. 2 | 9. 4 | 13. 1 | 17. 4 | 21. 4 |
| 2. 4 | 6. 2 | 10. 3 | 14. 2 | 18. 3 | 22. 1 |
| 3. 3 | 7. 1 | 11. 3 | 15. 1 | 19. 3 | 23. 2 |
| 4. 1 | 8. 2 | 12. 4 | 16. 4 | 20. 1 | 24. 1 |

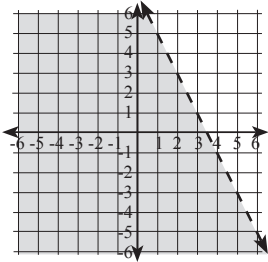
For parts II, III, and IV, partial credit should be given for answers that include, but not limited to, the following;

- correct answer, but no work shown
- incorrect answer, but rest of work is appropriate
- appropriate work is shown, but one computational or rounding error is made

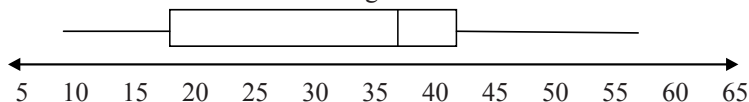
Part II

25. \$14
26. $2x(x + 2)(x - 3)$
27. A point in the shaded region is stated along with justification.
28. $x = -4, 2$
29. 17
30. Yes, $x = -1$ and $y = -5$ are the solutions to the equation $3x - 2 = -x - 6$ and work is shown for the check.
31. $f(-2) = 11$
32. $f(x) = (x - 1)^2 + 7$
 $(1, 7)$

Part III

33.  A point in the shaded region of the graph is stated.

34. a) 205 pounds b) 3 pounds c) 15 months
35. a) 4 years b) $y = 4(2)^x$
36. Box Plot of Ages



Part IV

37. Solution $(1.5, 1.25)$

TEST 2

Part I

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

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Part II

25. $y = \frac{1}{3}x + 5$

26. $[0, \infty]$ or equivalent explanation

27. $2(x-1)(3x+1)$

28. \$7,280

29. $\frac{3(b+4)}{b+2}$

30. $2x^4 - x^3 - 2x^2 + 2x - 4$

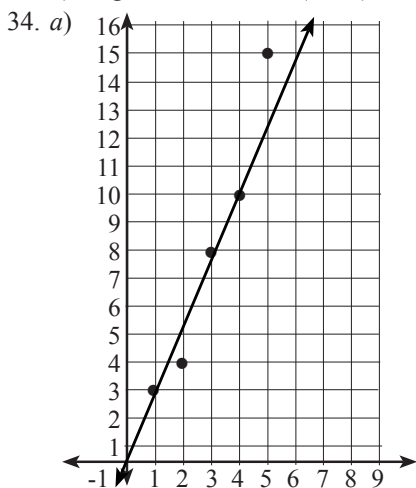
31. $h(-2) = -4$

32. 210 chairs for guests

Part III

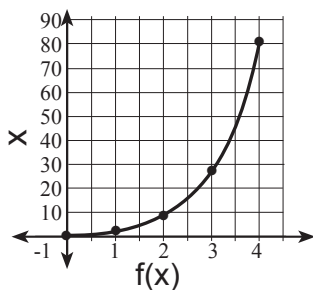
33. a) $25 + 8x < 11 + 10x$ or $11 + 10x > 25 + 8x$ where x is the month of the year

b) August – December ($x > 7$)



b) $y = 3x - 1$

35. An appropriate graph is drawn
such as the one to the right:
 $-10 \leq x \leq 10, -100 \leq y \leq 100$
The graph is labeled appropriately.
Function Rule: $y = 3^x$
or equivalent equation



36. a) $y = 2.85x + 38.89$
b) correlation coefficient $r = 0.95$
c) The correlation between the linear regression equation and the data is good as $r = 0.95$. If the correlation is good, the correlation coefficient is quite close to either 1 or -1 . 0.95 is very close to 1.

Part IV

37. a) $f(h) = 25 + 9.50h$
b) $0 \leq h \leq 20$ is the domain
c) Appropriate graph and scale are drawn.

TEST 3

Part I

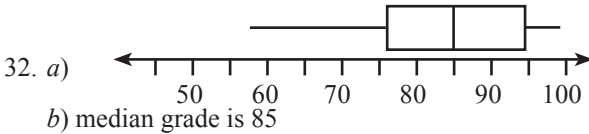
- | | | | | | |
|------|------|-------|-------|-------|-------|
| 1. 2 | 5. 4 | 9. 2 | 13. 3 | 17. 4 | 21. 4 |
| 2. 1 | 6. 3 | 10. 3 | 14. 4 | 18. 1 | 22. 2 |
| 3. 3 | 7. 3 | 11. 2 | 15. 3 | 19. 3 | 23. 3 |
| 4. 2 | 8. 4 | 12. 1 | 16. 1 | 20. 2 | 24. 2 |

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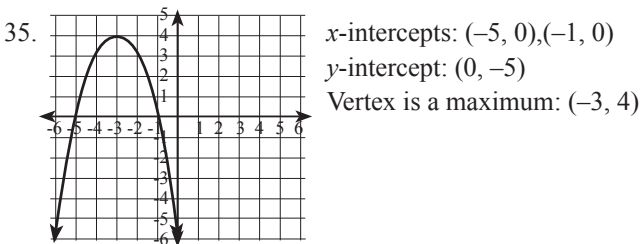
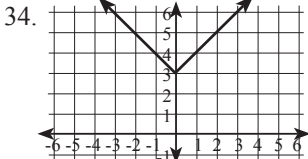
Part II

25. 4, 096
26. $\{-9\}$
27. $2x^4 + x^3 + 7x^2 + 4x - 4$
28. $\{-16\}$ or $(0, -16)$
29. $f(x) = 22x - 45$ or equivalent function
30. $A(d) = d^2 - \pi(\frac{1}{2}d)^2$ or equivalent function
31. $x = -2, 10$; a method is chosen with an appropriate justification.



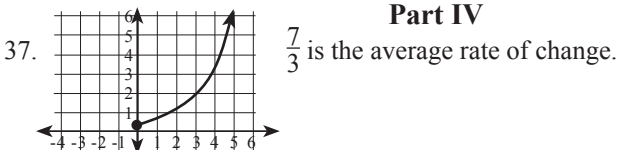
Part III

33. a) $y = 9.48x + 31.52$ b) \$268.52



36. a) $C(d) = 1600 + 0.10d$ b) \$2000 c) They would make \$400

Part IV



TEST 4

Part I

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

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Part II

25. $2x^2 - 2x - 40$

26. $f(-4) = 30$

27. $x = -\frac{2}{3}y + \frac{4}{3}$ or equivalent

28. $(-3, -5)$

29. \$3424

30. Mean = 12.9; Median = 12.5; Mode = 8. One measure of central tendency is chosen and calculated correctly and an appropriate justification is written.

31. $\{0, 5\}$

32. $x = -2, 1$

Part III

33. a) Variables may be defined in a number of ways, for example:

Let x = the number of gigabytes of data in the data plan

Let $P(x)$ = cost of the plan with Phones Unlimited

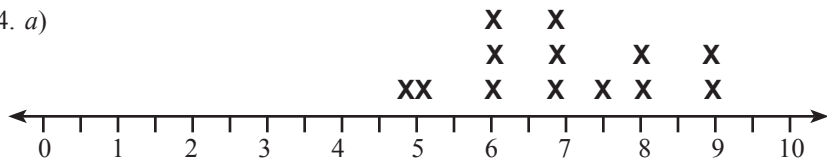
Let $C(x)$ = cost of the plan with Cells United

$P(x) = 20 + 4(x - .5)$

$C(x) = 10x$

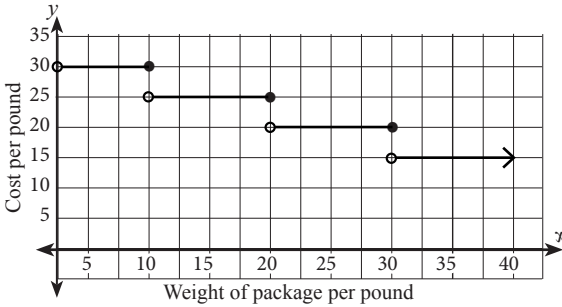
b) more than 3 gigabytes of data

34. a)



b) Mean = 6.9 minutes

35. a) Appropriate sketch of graph



b) $15 \text{ lbs} \times \$25/\text{Pound} = \375 shipping cost.

$$\$375 + .08(375) \Rightarrow \$375 + 30 = \$405$$

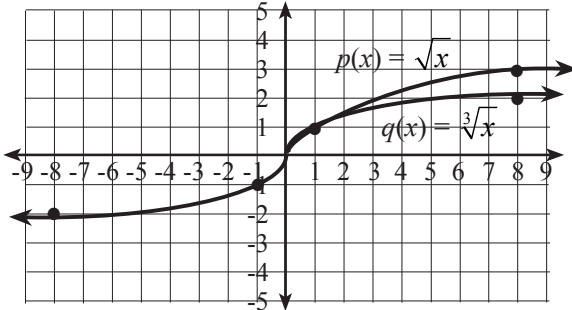
The total cost to send the package will be \$405.

36. An appropriate explanation is written such as graph $y = 3(5)^x$ and $y = 127 - 2x$ and find where they intersect.

The x-value will be the solution. $x = 2.3$

Part IV

37. An appropriate description of the relationship between $p(x)$ and $q(x)$ is given. For example, both graphs have a similar shape in the first quadrant.



TEST 5

Part I

- | | | | | | |
|------|------|-------|-------|-------|-------|
| 1. 4 | 5. 1 | 9. 1 | 13. 2 | 17. 4 | 21. 1 |
| 2. 2 | 6. 1 | 10. 3 | 14. 2 | 18. 1 | 22. 3 |
| 3. 1 | 7. 3 | 11. 2 | 15. 2 | 19. 2 | 23. 1 |
| 4. 3 | 8. 2 | 12. 1 | 16. 2 | 20. 4 | 24. 2 |

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Part II

25. $f = \frac{h(m+1)}{2}$

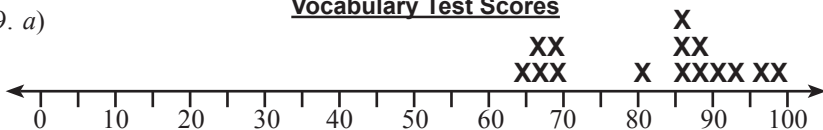
26. 4.2%

27. 2.4 hours

28. $(x-2)(3x-2)$

29. a)

Vocabulary Test Scores



b) The range is the better measure of spread because the data is all very close to the middle or median. Range is 31 points. IQR is 19 points.

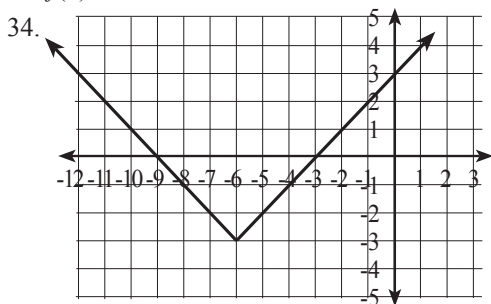
30. $y = 2x + 15$ or any equivalent equation

31. 315 meters

32. $x = 5$

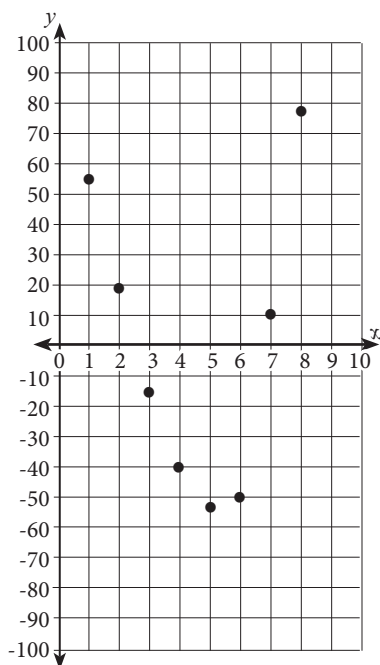
Part III

33. $f(d) = 2x + 4$



35. a) $y = 43.49x - 87.57$

- b) No, the equation is not a good fit for the data because the residuals form a U pattern. Therefore a different type of regression equation (not linear) would be a better fit for the data.



36. a) $y = 8x + 40$ and $y = 12.50x + 25$

- b) answers vary

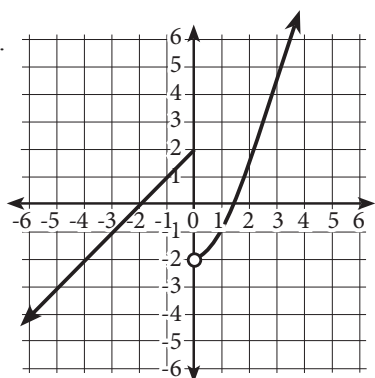
- c) Custom Coffee Co. better option first three months.

Five Star Coffee is the better option after that.

or other valid response.

Part IV

37.



TEST 6

Part I

- | | | | | | |
|------|------|-------|-------|-------|-------|
| 1. 4 | 5. 2 | 9. 1 | 13. 2 | 17. 3 | 21. 1 |
| 2. 2 | 6. 4 | 10. 1 | 14. 1 | 18. 2 | 22. 3 |
| 3. 1 | 7. 4 | 11. 2 | 15. 2 | 19. 2 | 23. 3 |
| 4. 3 | 8. 3 | 12. 3 | 16. 4 | 20. 1 | 24. 1 |

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Part II

25. $2x^2 + 3x - 4$

26. $x \leq 4$

27. -1

28. $x = \frac{1}{4}$

29. $\frac{4x^5 y^2}{3}$

30. \$180

31. No, by applying the Pythagorean Theorem, a 60 inch diagonal movie screen is the largest that will fit.

32. Completed table and Month 4 (or April)

x	y
1	-675
2	-350
3	-25
4	300
5	625
6	950
7	1275
8	1600
9	1925
10	2250
11	2575
12	2900

Part III

33. $3x^2 - 13x - 7$

34.

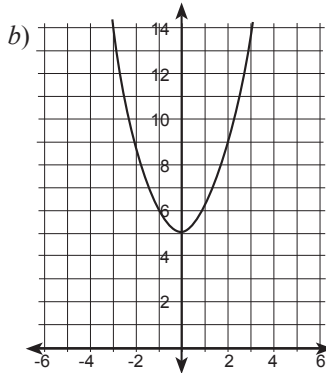
Conditional Relative Frequencies

	Gender		Total
	Boys	Girls	
Creative Writing	65	150	215
Visual Storytelling	70	120	190
Newspaper Journalism	88	56	144
Graphic Design	74	136	210
Total	297	462	759

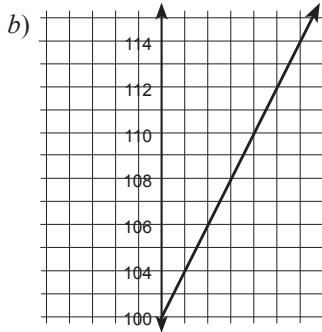
a) $\frac{120}{462}$ or 25.97%

b) $\frac{136}{210}$ or 64.76%

35. a) $g(x) = x^2 + 5$



36. a) $f(t) = 100(1.037)^t$



Part IV

37. Let x = boxes of cookies

y = pounds of assorted fruits

$$3x + 5y < 50$$

$$y \geq 4$$

Possible solutions: (2, 6) 2 boxes of cookies and 6 pounds of fruits

(4, 5) 4 boxes of cookies and 5 pounds of fruits