

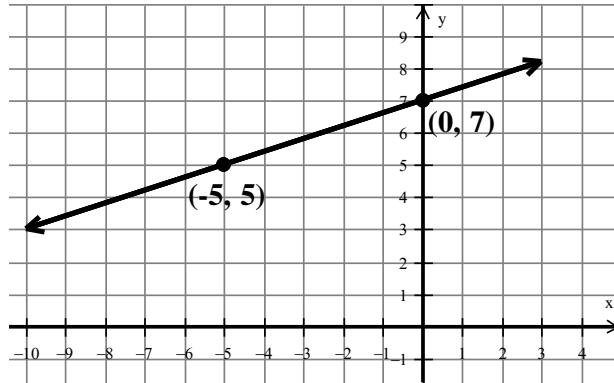
## MATH 082 Final Exam Review Answers

1.  $y = \frac{3}{4}x + 3$

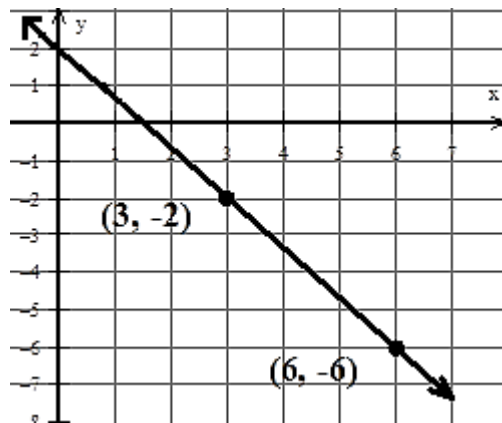
2.  $y = \frac{1}{2}x + \frac{5}{2}$

3.  $y = \frac{3}{2}x - \frac{19}{2}$

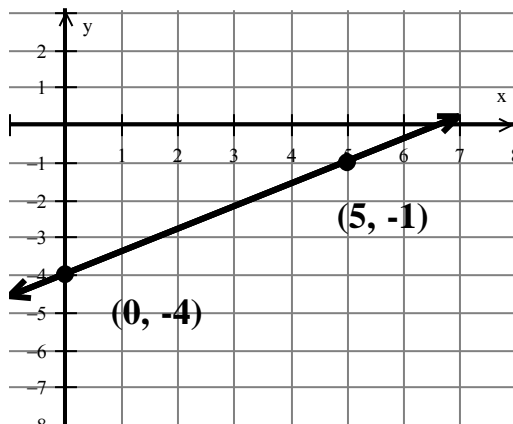
4.



5.



6.



7. y-int:  $\left(0, \frac{1}{2}\right)$

x-int:  $\left(-\frac{5}{2}, 0\right)$

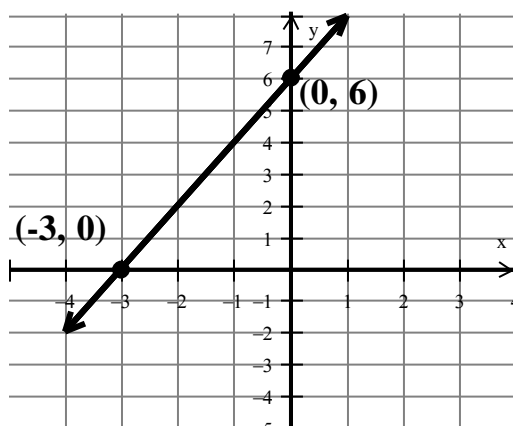
8. y-int:  $(0, -3)$

x-int:  $(-2, 0)$

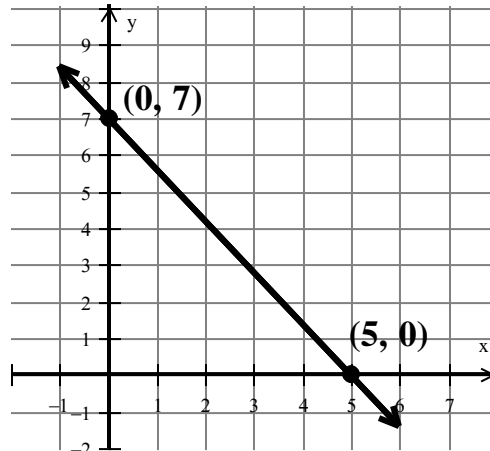
9. y-int:  $\left(0, -\frac{3}{4}\right)$

x-int:  $\left(\frac{1}{2}, 0\right)$

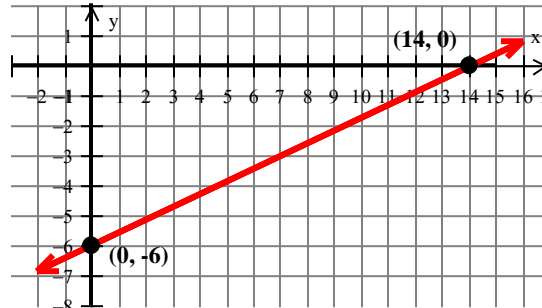
10.



11.



12.



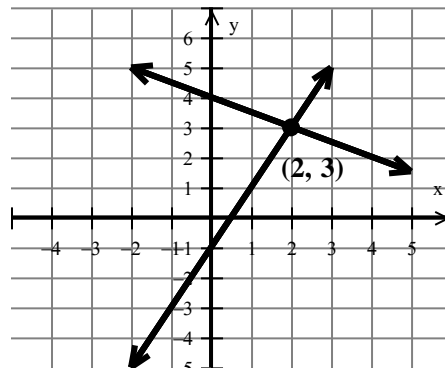
13.  $\frac{11}{5}$

14. 0

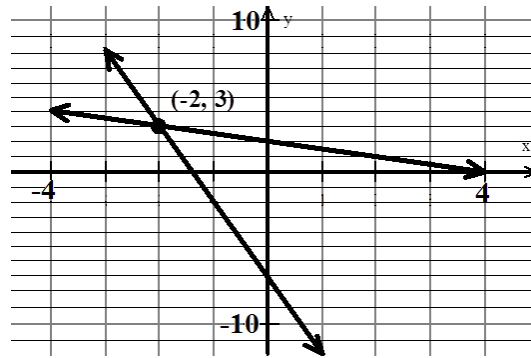
15.  $-\frac{8}{5}$

16.  $\frac{5}{8}$

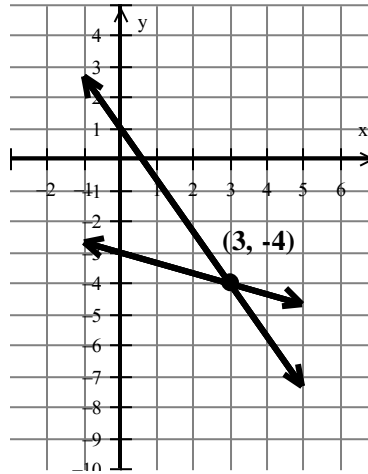
17. (2,3)



18.  $(-2, 3)$



19.  $(3, -4)$



20.  $(2, 3)$

21.  $(-2, 3)$

22.  $(3, -4)$

23.  $(-1, -3)$

24.  $(2, -1)$

25.  $\left(\frac{1}{2}, -\frac{1}{2}\right)$

26. 218

27. \$400 at 5%; 1100 at 6%

28. Burger: 9 grams; Fries: 16 grams

29.  $-10y - 12$

30.  $-10t^2 + 42t + 54$

31.  $2x^2 - 28x - 19$

32.  $15z^{10}$

33.  $24x^{11}$

34.  $-24t^{12}$

35.  $6t^2 - 5t - 25$

36.  $3x^2 + 8x - 3$

37.  $10x^2 + x - 21$

38.  $16x^6$

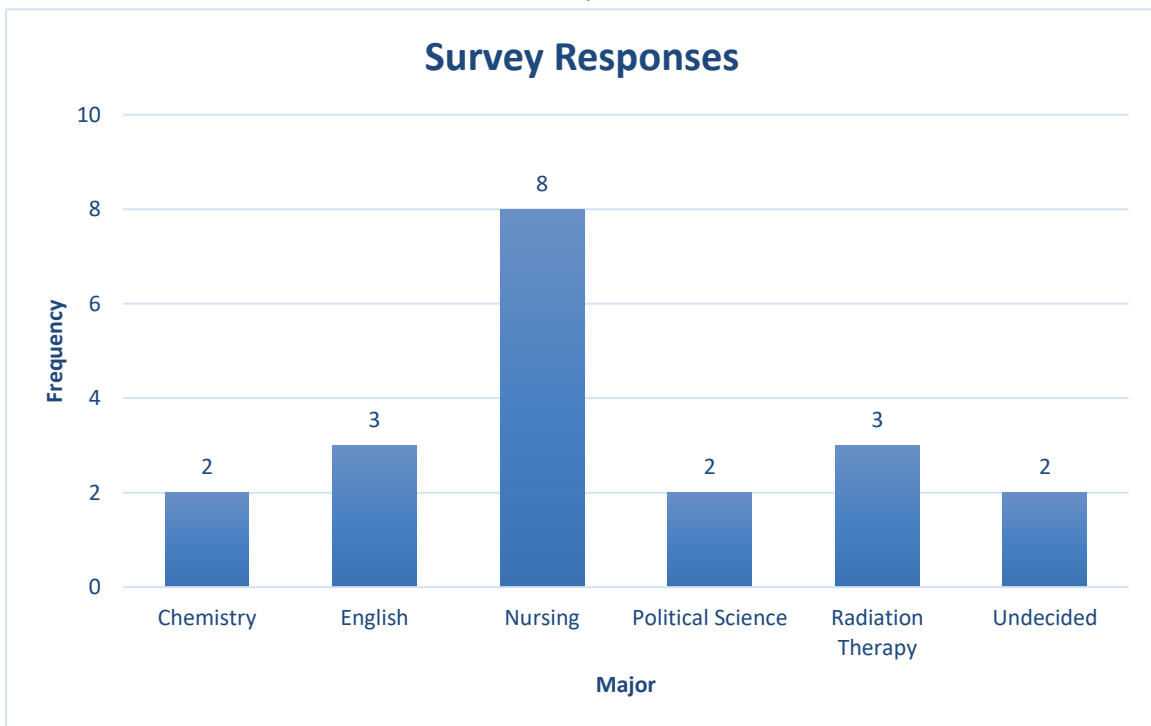
39.  $\frac{-27y^{12}}{x^9}$
40.  $\frac{256x^{20}}{y^8}$
41.  $-2x^3y^3$
42.  $-4x^4yt^4$
43.  $-\frac{1}{4x^4yt^4}$
44.  $2y^2$
45. a) 40564.3  
 b)  $7.87507 \times 10^2$   
 c)  $5.6 \times 10^4$   
 d)  $4 \times 10^{13}$
46.  $4z^5(2-3z^2)$
47.  $3x^2y(2y^2+3x)$
48.  $7r^3s(4rs+1-5rs^2)$
49.  $(x-11)(x+3)$
50.  $(x+9)(x-2)$
51.  $(9-2x)(9+2x)$
52.  $(x-8)(x+5)$
53.  $(a+b)(a+b)$   
 or  $(a+b)^2$
54.  $(2x)(x-1)(x-2)$
55.  $(x-4y)(x+y)$
56.  $\{-6, 3\}$
57.  $\{4, 2\}$
58.  $\{-\frac{7}{5}, \frac{7}{5}\}$
59.  $\{-6, 5\}$
60.  $\{-3, 3\}$
61.  $\{-1, 6\}$
62. a) qualitative  
 b) qualitative  
 c) quantitative-continuous  
 d) quantitative-continuous  
 e) qualitative  
 f) quantitative-discrete  
 g) quantitative-discrete
63. Rank – qualitative; Home – qualitative; 2017 – qualitative;  
 Score – quantitative continuous
64. 17.7%

65. a) Bus      b)  $\frac{1}{4}$       c) 24 students

66. a)

Major	Frequency
Chemistry	2
English	3
Nursing	8
Political Science	2
Radiation Therapy	3
Undecided	2
<b>Total</b>	<b>20</b>

b)



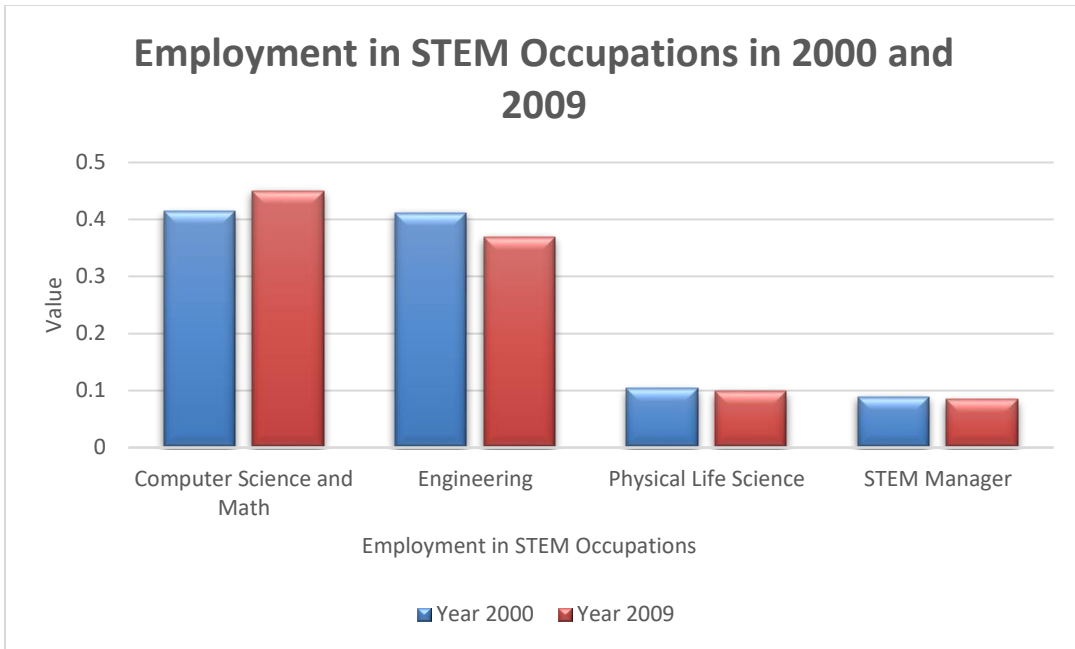
c) 20 students

d) 40%

67. a)

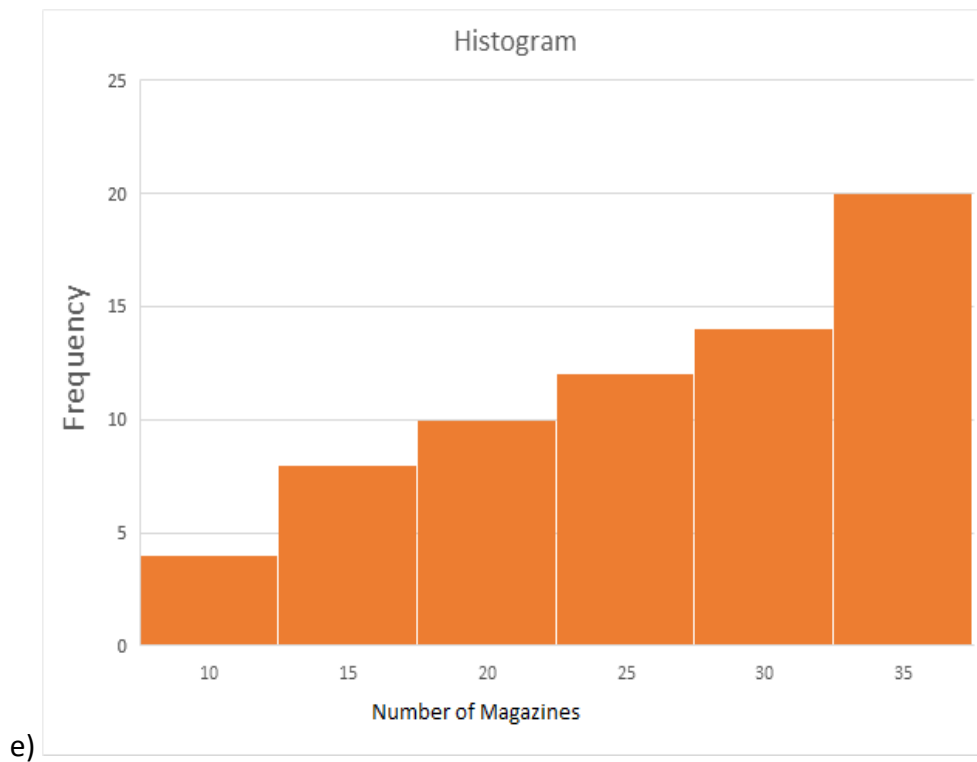
STEM Occupation	Year 2000 n =5320	Relative Frequency	Year 2009 n =5640	Relative Frequency
Computer Science and Math	2202	0.4139	2534	0.4493
Engineering	2185	0.4107	2079	0.3686
Physical Life Science	551	0.1036	553	0.0980
STEM Manager	382	0.0718	474	0.0840

b) When you are comparing the relative frequencies of the employment in stem occupations for females between year 2000 and year 2009, the relative frequencies are slightly different. In both years, the majority of the occupations are in Computer Science and Math and Engineering. We see an increase of 3.53% (0.0354 relative frequency) in the Computer Science and Math occupation, and a decrease of 4.18% (0.0418 relative frequency) in the Engineering occupation.



68. The dotplot displays a bimodal distribution since it has two separated peaks.

69. a) 68 magazines    b) 5    c) 10, 15, 20, 25, 30, 35    d) 14, 19, 24, 29, 34, 39





70.

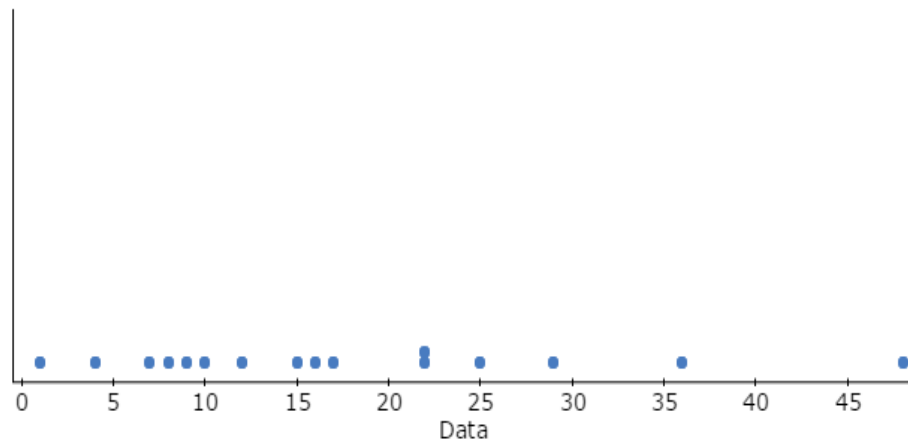
Test Scores	Frequency	Relative Frequency
60-69	3	$3/15 = 0.2$
70-79	4	$4/15 = 0.266\dots$
80-89	5	$5/15 = 0.333\dots$
90-99	3	$3/15 = 0.2$

71. a) 8 people

b) 16 people

c) 3 people

72. skewed right



73.

74. a) mean = 67

b) median = 68

c) mode = 10

75. a) mean    b) median

76. 11 (choice a)

77. a) Bank A: 5 minutes; Bank B: 3 minutes

b) Bank A: 1.939; Bank B: 1.166

c) Bank B

78. \$17,500

79.  $z = -1$

80. a) Dwayne's z-score = 3.29; Julia's z-score = 2.8

b) Dwayne is taller, since his z-score is higher.

81. a) Husband's z-score = 1.5; Wife's z-score = 1.25 b) \$16.20 per hour

82. a) five number summary:

Minimum: 5  
Q<sub>1</sub>: 10  
Q<sub>2</sub> (median): 15  
Q<sub>3</sub>: 18  
Maximum: 37

b) 8

83. a) mean = 31

b) median = 3

c) five number summary:

Minimum: 16  
Q<sub>1</sub>: 23  
Q<sub>2</sub> (median): 32  
Q<sub>3</sub>: 37  
Maximum: 43