MA 111 Even Homework Answers

Lesson 1: Section 1.1

2. $n-2$
4. $2x$
12. $mn+2$
24. 3
46. True
48. True
50 False
62. $3(m+n)$

Lesson 2: Section 1.2

2. 7
8. $3\frac{3}{4}$
50. -3
52. 1.9
62. 6
76. 56
86. 5
88. -10
94. $\frac{1}{3}$
106. $\frac{1}{33}$
110. -3

Lesson 3: Section 1.3

10. $y=6.9$
46. $-15y-45$
50. $47b-51$
58. $t=13$
64. $y=1$
70. $x=-6$
72. $x=\frac{37}{5}$

Lesson 4: Section 1.4

4. Let t = time (hours) it will take Fran to swim 1.8 km upriver:
$2.7t=1.8$
6. Let t = the boat's time (hours):
$21t=56$
10. Let x = longer length:
$x+\frac{2}{3}x=10$
12. Let x = measure of the second angle:
$4x+x+(2x+5)=180$

Lesson 5: Section 1.4

20. Let p = pop. at start of three-year period
$1.12(1.12)(1.12)p=50{,}577$
28. the larger number is 78.5; smaller number is 13.5
34. the integers are 9, 11, and 13

Lesson 6: Section 1.5

8. $r=\frac{I}{Pt}$
16. $l=\frac{P-2w}{2}$ or $\frac{P}{2}-w$
26. $d=\frac{s+t}{r}$
44. 25 feet

Lesson 7: Section 1.6

2. 2^{11}
20. $9x^6y^6$
30. $\frac{1}{16}$
32. $-\frac{1}{16}$
64. $\frac{1}{9^7}$
68. 1

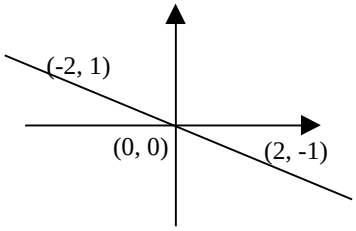
Lesson 8: Section 1.6-7

Page 51:
88. a^6
90. $\frac{1}{8^{12}}$
106. $\frac{8x^9y^3}{27}$
108. 1

Page 57:
2. 2.6×10^{12}
20. 0.07034
28. 3.4×10^{-4}
48. 3.2×10

Lesson 9: Section 2.1

10. IV
12. III
16. Yes
26. No
32.



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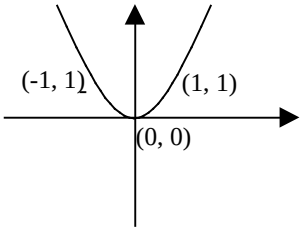
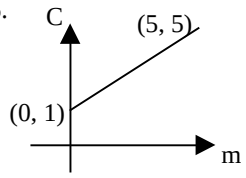


Lesson 10: Section 2.2

20. (a) $f(1)\approx\frac{9}{2}$
(b) $\{x|-3\le x\le 4\}$
(c) $x\approx -\frac{2}{3}$, 3
(d) $\{y|-4\le y\le 5\}$
34. (a) $g(0)=0$
(b) $g(-1)=5$
(c) $g(3)=21$
(d) $g(t)=3t^2-2t$
(e) $g(2a)=12a^2-4a$
42. 100π *or* $314.16cm^2$
56. About 150,000

Lesson 11: Section 2.3

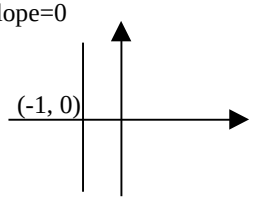
12. $f(x)=-\frac{3}{4}x+5$
14. $f(x)=2x-1$
20. slope $=\frac{4}{3}$
22. slope $=\frac{3}{26}$
56.



(b) About \$4.25 (c) About 5 min.

Lesson 12: Section 2.4

6. slope=0
24.



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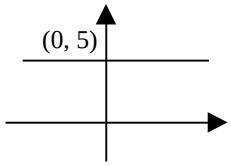

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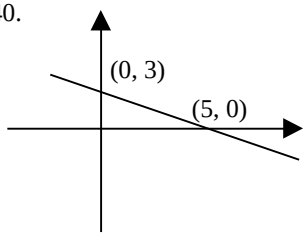
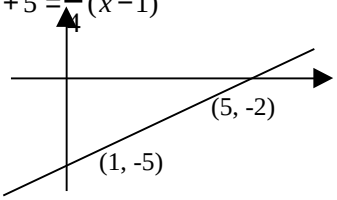


64. equation is linear; slope $=-\frac{3}{5}$

Lesson 13: Section 2.5

10. $y+5=\frac{3}{4}(x-1)$



28. $f(x)=\frac{5}{2}x+\frac{15}{2}$

34. (a) $A(p)=-2.5p+26.5$
(b) 11.5 million lb

42. Yes, the lines are parallel

52. $y=-\frac{5}{2}x-\frac{35}{2}$

62. $y=-\frac{2}{5}x-\frac{31}{5}$

Lesson 14: Section 2.6

8. $-\frac{8}{11}$

18. -1

36. For all: $\{x|x \text{ is real}\}$

50. $\{x|x\neq 2, 7\}$

54. $(F\ G)(6)=0$

$(F\ G)(9)=2$

Lesson 15: Section 3.1

6. Let $x=$ measure of first angle; $y=$ measure of second angle:

$$x+y=90$$

$$x+\frac{1}{2}y=64$$

10. $2l+2w=288$

$l=w+44$

12. Let $x=$ # two-pointers; $y=$ # three pointers

$x+y=40$

$2x+3y=89$

16. Let $x=$ # of 30 sec. Commercials; y= # of 60 sec. commercials

$x+y=12$

$30x+60y=600$

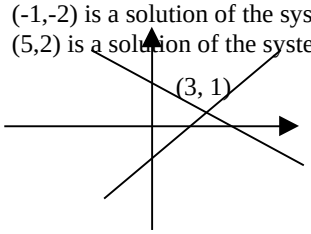
18. $c+f=152$

$c=5+6f$

20. (-1,-2) is a solution of the system

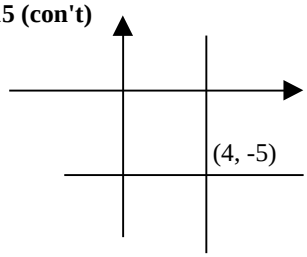
24. (5,2) is a solution of the system

28.



Lesson 15 (con't)

36.



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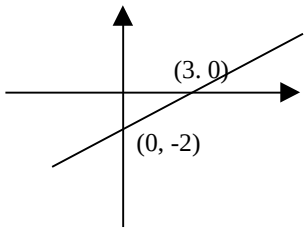


$\{(x,y)|\ 2x-3y=6\}$

Lesson 16: Section 3.2

6. (2, -2)

12. $\left(\frac{19}{8},\frac{1}{8}\right)$

24. (6, 2)

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

36. $\left(-\frac{4}{3},-\frac{19}{3}\right)$

Lesson 17: Section 3.3

10. $l=94$ ft, $w=50$ ft

12. 31 two-pointers and 9 three-pointers

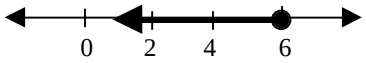
32. $l=76$ m and $w=19$ m

Lesson 18: Section 4.1

2. -5 is a solution, -10 is a solution, 0 is not a solution, and 27 is not a solution

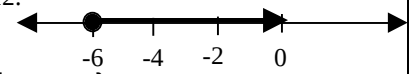
4. 2 is not a solution, -3 is a solution, 0 is a solution, and 3 is not a solution

8.



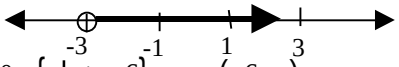
$\{t|t\leq 6\}$; $(-\infty,6]$

12.

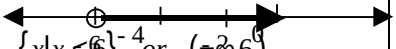


$\{x|x\geq -6\}$; $[-6,\infty)$

14. $\{x|x>-3\}$ *or* $(-3,\infty)$



20. $\{y|y>-6\}$ *or* $(-6,\infty)$



32. $\{x|x<6\}$ *or* $(-\infty,6)$

48. $\{x|x>6\}$ *or* $(6,\infty)$

Lesson 19: Section 4.1 (con't)

56. select Plan A for gross sales greater than $7000

58. Plan B is better for values greater than $85\frac{5}{7}$

62. (a) gold is solid for temp. less than $1945.4°$ F
(b) silver is solid for temp. less than $1761.44°$ F

Lesson 20: Section 5.1

2. Degree of terms: 3,2,1,0; degree of poly.:3

20. $Q(3)=-46$ and $Q(-1)=10$

52. $15x+7y-5z$

56. $2a^2+3b-4ab+4$

68. $13y+5$

74. $5y^2+6y+3y^3$

Lesson 21: Section 5.2

8. $3a^3-12a^2$

14. m^2-25

34. x^2+5x+6

56. x^2-9

60. $9x^2-25y^2$

Lesson 22: Section 5.3

22. $-2(x^2-6x-20)$

26. $-4m(m^3+8m^2-16)$

42. $(a+5)(2a-1)$

48. $(y-1)(y^2+3)$

Lesson 23: Section 5.4

2. $(x+1)(x+5)$

6. $(t-5)(t+3)$

8. $2(a-4)^2$

10. $x(x+9)(x-6)$

18. $(x+3)(x-2)$

20. $5(y+1)(y+7)$

38. $(3x+2)(x-6)$

44. $(3a+2)(3a+4)$

Lesson 24: Section 5.5, 7

Page 285:

6. $4(a-2)^2$

26. $(y+10)(y-10)$

30. $(pq+5)(pq-5)$

38. $a^2(3a+b)(3a-b)$

Page 293:

2. $(x+12)(x-12)$

4. $(2a-3)(a-4)$

12. $(4a+9b)(4a-9b)$

40. $(a+b)^2(a-b)$

Lesson 25: Section 5.8

2. t = 7 or t = -4
8. y = -5 or y = -3
44. x = -12 or x = 11
48. The length is 3 m
54. The integers are -10, -8, and -6 or 6, 8, and 10

Lesson 26: Section 6.1

18. $\frac{7}{2x-3}$
32. $\frac{a+4}{a-4}$
50. $\frac{1}{y+1}$
62. $\frac{(y-3)(y+2)}{y^6}$
66. $-x^2$

Lesson 27: Section 6.2

Page 327:

2. $\frac{4}{y}$
16. $\frac{7}{a}$
32. $\frac{4y+17}{(y+2)(y-2)}$

Lesson 28: Section 6.4

12. $y=-\frac{1}{2}$
32. $y=-3$

Lesson 29: Section 6.5

8. $\frac{45}{14}$ *or* $3\frac{3}{14}$ hours
10. 9.9 hours
28. Simone's speed is $\frac{16}{3}$ mph;
Rosanna's speed is $\frac{10}{3}$ mph
30. Train B is 58 mph and train A is 46 mph
32. $\frac{6}{5}$ km / h

Lesson 30: Section 7.1

2. 15, -15
12. 21
16. 0.6
26. $p(4)=\sqrt{12}$; $p(3)=\sqrt{-2}$ (not real); $p(-5)=\sqrt{30}$; $p(0)=\sqrt{-20}$ (not real)
30. $f(2)=\sqrt{-2}$ (not real); $f(3)=\sqrt{17}$; $f(4)=\sqrt{54}$
60. $4x$
64. $a+1$
70. 3
72. $2x$
80. $(x-2)^4$

Lesson 31: Section 7.2

4. 2
18. 81
20. 729
24. $27y^9$
28. $6^{\frac{1}{2}}$
30. $a^{\frac{5}{2}}$
36. $(x^3y^2z^2)^{\frac{1}{7}}$
64. $8^{\frac{9}{11}}$

Lesson 32: Section 7.3-4

2. $\sqrt{35}$
36. $3\sqrt{5}$
54. $x^3y^4\sqrt{y}$
56. $a^2b^2c^4\left(\sqrt[3]{bc}\right)$

Page 401:

2. $3\sqrt{2}$

Lesson 33: Section 7.5-6

Page 408:

2. $4\sqrt{3}+3$
4. $5-\sqrt{10}$
42. $\frac{2\sqrt{10}}{3}$

Page 414:

8. y =-3

Lesson 34: Section 8.1-2

Page 443:

2. $x=\pm\sqrt{5}$
6. $x=\pm\frac{\sqrt{21}}{3}$

Page 449:

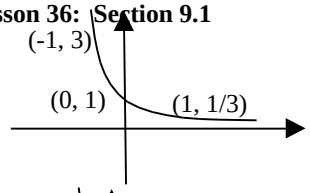
4. $u=3\pm\sqrt{7}$

Lesson 35: Section 8.6

2. $y=\frac{5}{12}x$
14. 40 lb
18. $y=\frac{64}{x}$
34. $y=\frac{0.0015}{x^2}$

Lesson 36: Section 9.1

14.



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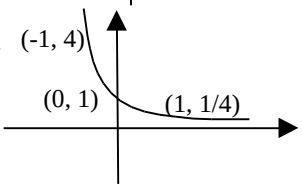
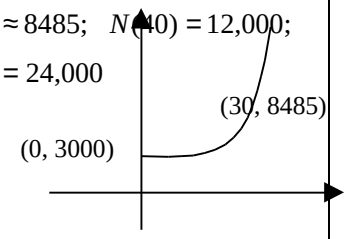


34. (a)

$N(10)\approx 4243$; $N(20)=6000$;
$N(30)\approx 8485$; $N(40)=12{,}000$;
$N(60)=24{,}000$

(b)



Lesson 37: Section 9.2

6. $f\circ g(x)=\frac{1}{x^2+4x+4}$;
$g\circ f(x)=\frac{1}{x^2}+2$
34. (a) Is one-to-one
(b) $g^{-1}(x)=\frac{x-7}{4}$

Lesson 38: Section 9.3

20. $k=\log_p 3$
62. 1
64. 0
66. 3
70. 1

Lesson 39: Section 9.4

2. $\log_2 16+\log_2 32$
12. $5\log_b t$
20. $\log_a y-\log_a x$
36. $\log_b m^2\sqrt{n}$
40. $\log_a \frac{2x^4}{y^3}$
50. 2.099
56. 4
