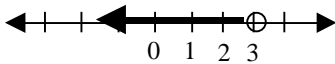


## MA 152 Even Homework Answers (front and back)

<p><b>Lesson 1: Section 1.1</b></p> <p>2. <math>\frac{x+y}{2}</math></p> <p>4. <math>x+x^2</math></p> <p>6. <math>0.2(x-50)</math></p> <p>10. <math>\frac{x}{y}</math></p> <p>12. <math>3x+5y</math></p> <p>16. <math>\frac{1}{6}b^2</math></p> <p>18. <math>22x^2</math></p> <p>20. <math>x^2 + \frac{1}{8}x^2</math></p> <p><b>Lesson 2: Section 1.1</b></p> <p>30. 9</p> <p>36. 9 feet</p> <p><b>Lesson 3: Section 1.2</b></p> <p>16. <math>\frac{-3x-2}{2}</math></p> <p>40. <math>\frac{11}{13}</math></p> <p>50. <math>\frac{4}{19}</math></p> <p>54. <math>\frac{86}{45}</math></p> <p>62. 84 acres</p> <p><b>Lesson 4: Section 1.3</b></p> <p>2. 2 2 2 3 3 7</p> <p>4. 3 3 3 7 11</p> <p>8. <math>2^3 3^3 7 11 = 16,632</math></p> <p>14. <math>\frac{157}{16,632}</math></p> <p>30. <math>\frac{86}{165}</math></p> <p>34. .253968</p> <p><b>Lesson 5: Section 1.4</b></p> <p>10. 12,100</p> <p>24. False. (Show by a=b=1)</p> <p>30. True</p> <p>32. True</p> <p>34. (a) commute (d) do not commute (e) commute (f) do not commute (g) commute</p> <p><b>Lesson 6: Section 1.5</b></p> <p>2. &gt;</p> <p>6. &lt;</p> <p>8. &lt;</p> <p>10. &lt;</p> <p>16. </p> <p>26. -1 x 2</p> <p>28. <math>x &lt; 1</math></p> <p>36. <math>4 &lt; x &lt; 6</math></p>	<p><b>Lesson 7: Section 1.6</b></p> <p>2. <math>-2-10i</math></p> <p>10. <math>-5+3i</math></p> <p>12. <math>-27-5i</math></p> <p>14. <math>16+30i</math></p> <p>18. <math>\frac{35}{13} + \frac{6}{13}i</math></p> <p><b>Lesson 8: Section 2.1</b></p> <p>2. 8</p> <p>4. 125</p> <p>8. <math>\frac{1}{25}</math></p> <p>10. <math>\frac{1}{32}</math></p> <p>14. <math>-\frac{1}{24}</math></p> <p>16. <math>\frac{81}{16}</math></p> <p>22. <math>\frac{1}{16}</math></p> <p>30. <math>\frac{4y^2z^2}{x^4}</math></p> <p><b>Lesson 9: Section 2.2</b></p> <p>2. <math>2.5 \times 10^{10}</math></p> <p>8. <math>2.88 \times 10^5</math></p> <p>10. <math>1.2 \times 10^8</math></p> <p>32. .07643689</p> <p>52. about <math>1.03 \times 10^6</math> times greater</p> <p><b>Lesson 10: Section 2.3</b></p> <p>8. not a polynomial</p> <p>10. polynomial of degree 10</p> <p>18. <math>\frac{2}{3}x - \frac{1}{4}</math></p> <p>24. <math>t^2 + 8t - 65</math></p> <p>28. <math>12t^2 - 26t + 10</math></p> <p>30. <math>y^2 - 2y + 1</math></p> <p>34. <math>y^2 + 24y + 144</math></p> <p>36. <math>t^2 - 25</math></p> <p>38. <math>9s^2 + 66s + 121</math></p> <p>40. <math>u^6 - 4u^4</math></p> <p><b>Lesson 11: Section 2.4</b></p> <p>2. <math>y^2(y+4)</math></p> <p>12. <math>(3x-1)^2</math></p> <p>16. <math>(3x+8y)(3x-8y)</math></p> <p>18. <math>(7x+2)(x-3)</math></p> <p>34. <math>t^2(t-1)(t+1)</math></p>	<p><b>Lesson 12: Section 2.4</b></p> <p>52. <math>(x^2+y^2)(x+y)(x-y)</math></p> <p>72. <math>(3m+1)^2</math></p> <p>76. <math>3(x-3)^2</math></p> <p><b>Lesson 13: Section 2.5</b></p> <p>2. <math>\frac{x+1}{4}</math></p> <p>4. <math>\frac{x-1}{x+2}</math></p> <p>12. <math>\frac{x+10}{x(x+3)}</math></p> <p>24. <math>\frac{3}{x^2}</math></p> <p>26. <math>\frac{4}{3(x+2)}</math></p> <p>36. <math>\frac{b}{b-2}</math></p> <p>50. <math>\frac{5}{3(x-4)}</math></p> <p><b>Lesson 14: Section 3.1</b></p> <p>2. identity</p> <p>8. identity</p> <p>12. <math>x = -3</math></p> <p>14. <math>y = -\frac{1}{5}</math></p> <p>24. <math>x = 48</math></p> <p>32. <math>x = 4</math></p> <p>34. No solutions</p> <p><b>Lesson 15: Section 3.2</b></p> <p>8. 1050 lbs. in smaller bin; 1800 lbs. in larger bin</p> <p>20. 60 miles per hour</p> <p><b>Lesson 16: Section 3.2</b></p> <p>26. \$3600 at 7%</p> <p>28. \$2400</p> <p>40. <math>x = 11</math></p> <p>42. 17.4 hours</p> <p>46. <math>7\frac{1}{2}</math> hours</p> <p>48. <math>36\frac{2}{3}</math> liters</p> <p><b>Lesson 17: Section 3.3</b></p> <p>8. <math>x = -15, y = -3</math></p> <p>10. <math>x = 4, y = 0</math></p> <p>14. <math>x = 4, y = 0</math></p> <p>16. <math>a = \frac{3}{2}, b = -1</math></p> <p><b>Lesson 18: Section 3.3</b></p> <p>34. Janice's estate: \$140,000; husband's: \$45,000</p> <p>38. \$12,000 at 10%; \$68,000 at 12%</p> <p>40. 1200 L of 15% solution; 1800 L of 30% solution</p> <p>42. airspeed: 540 mph; distance: 1200 miles</p>
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**Lesson 19: Section 3.4**

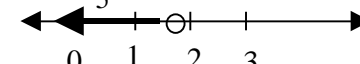
2.  $10\sqrt{3}$   
 22.  $x = 0, x = \frac{5}{2}$   
 24.  $x = \pm \frac{3}{2}$   
 34.  $x = 15, x = -3$

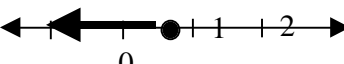
**Lesson 20: Section 3.4**

40.  $x = 5, x = -3$   
 46.  $y = -4 \pm \sqrt{6}$   
 48.  $x = \frac{-1 \pm i\sqrt{3}}{2}$

62.  $x = 3, x = -4$   
 88. 9.516 meters

**Lesson 21: Section 3.5**

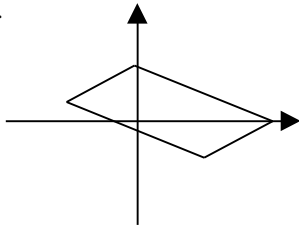
4. conditional  
 16.  $x < \frac{9}{5}$   

 A number line with tick marks at 0, 1, 2, and 3. An open circle is drawn at 1.8 (9/5), and the region to the left of this circle is shaded with arrows pointing left.

18.  $x \geq \frac{31}{40}$   

 A number line with tick marks at 0, 1, and 2. A closed circle is drawn at 0.775 (31/40), and the region to the right of this circle is shaded with arrows pointing right.

38.  $\frac{1}{2} < x < \frac{7}{2}$   
 62.  $x < -\frac{13}{30}$   
 80. Co. B if fewer than 1250 miles

**Lesson 22: Section 4.1**

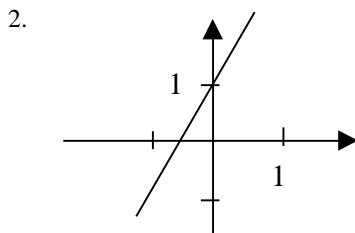
2. 11  
 10.  $b=4$  or  $b=14$   
 18.



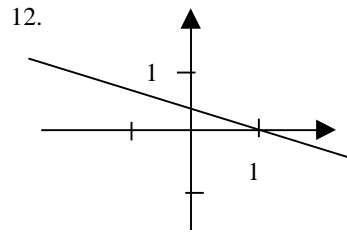
Parallelogram

20.  $\frac{9}{2}, 7$ ;  $d(P_1 P_2) = 13$   
 28. (7,3) and (7,-1) or (-1,3) and (-1,-1)  
 30. The three distances are  $\sqrt{50}, \sqrt{160}, \sqrt{50}$ ; and since two of these are equal -- isosceles

**Lesson 23: Section 4.2**



**Lesson 23 (con't)**



30. center (5,-5) and radius  $5\sqrt{2}$   
 42.  $(x-3)^2 + (y-7)^2 = 29$

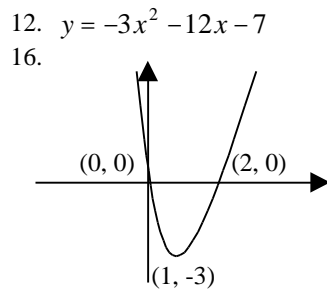
**Lesson 24: Section 4.3**

4. slope = 1  
 10.  $3x - y - 10 = 0$   
 14.  $x - y - 3 = 0$   
 18.  $x - 4y = 0$   
 20.  $x - y + 6 = 0$   
 30. slope =  $-\frac{4}{5}$  and y-intercept = -4

**Lesson 25: Section 4.3**

36. (a)  $k=6$  (b)  $k = -\frac{3}{2}$  (c)  $k = \frac{9}{2}$   
 48. (a)  $6x + 5y - 7 = 0$   
 (b)  $2x - 3y - 7 = 0$   
 (c)  $2x - y - 5 = 0$   
 (d)  $y = -1$   
 58.  $V = -3900t + 80,000$

**Lesson 26: Section 4.4**

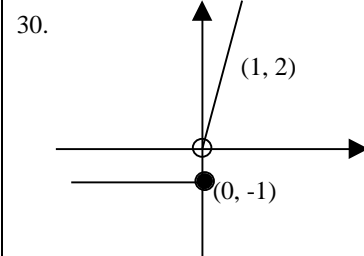
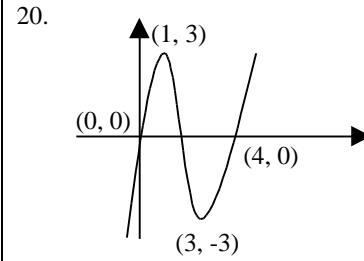
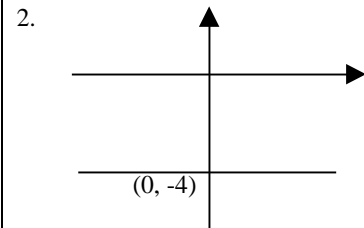


32.  $y = -\frac{2}{3}x^2$   
 34.  $y + 1 = \frac{6}{25}(x - 3)^2$   
 or  $y = \frac{6}{25}(x - 3)^2 - 1$

**Lesson 27: Section 5.1**

4. (a) 49 (b)  $-\frac{1}{2}$  (c)  $\frac{1}{16}$  (d)  $\frac{1}{16}$   
 (e) 8 (f) 2 (g) undefined (h) 2  
 (i) 4 (j)  $\frac{1}{2}$   
 8.  $\{x: x \geq 3, x \leq -3\}$   
 46.  $y = 400x^2$   
 48.  $V = \frac{1}{3}r^2h$   
 50.  $W = \frac{4x}{\sqrt{yz}}$

**Lesson 28: Section 5.2**



**Lesson 29: Section 5.5-6**

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16.  $(g \circ f)(x) = \frac{1}{2x^2 + 5}$  and domain is all reals  
 $(f \circ g)(x) = \frac{2}{x^2} + 5$  and domain is  $\{x: x \neq 0\}$

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2. (b) one-to-one  
 (f) not one-to-one  
 8.  $f^{-1}(x) = \frac{2-x}{3}$

**Lesson 30: Section 6.1**

2. -2  
 4. 2  
 6.  
 10. 25  
 12. 8  
 32.  $\frac{4(\sqrt{x} + 2)}{x - 4}$   
 34.  $\frac{4\sqrt{x - 2}}{x - 2}$   
 50.  $x=7$

**Lesson 31: Section 6.2**

2.  $7^{\frac{1}{5}}$   
 8.  $7^{-\frac{3}{5}}$   
 14.  $x^{\frac{4}{3}}$   
 22.  $\frac{1}{\sqrt[6]{12^5}}$   
 30. 3  
 46. 10  
 50.  $a^3b$   
 52.  $\frac{a^6b^4}{c^{10}}$

**Lesson 32: Section 6.3**

8. \$67,746  
 18. 12,800 individuals

**Lesson 33: Section 6.4**

2.  $\log_7 343 = 3$   
 18.  $3^{-3} = \frac{1}{27}$   
 22.  $\log_4 16 = 2$   
 26.  $\log_4 2 = \frac{1}{2}$   
 30.  $\log_8 1 = 0$   
 34.  $c=5$

**Lesson 34: Section 6.4**

44. .176  
 48. -1.431  
 64.  $\log_5 \frac{x^2(x - 4)}{(2x + 1)^3}$

**Lesson 35: Section 6.5**

2. 2  
 4. -1  
 12. 5  
 18. 6.2480429  
 24. 2.4748098  
 32. 1.0025733  
 34. 1.1483583  
 38. 1.3547556  
 44. 5.13 years  
 62. 8.36 hours

**Lesson 36: Section 11.1**

2. simple interest = \$144;  
 final amt = \$594  
 6. simple interest = \$1306.84  
 final amt = \$3081.84

**Lesson 37: Section 11.1**

22. \$6046.43  
 24. 8.75%  
 30. about 6.32 years or 6 yrs and 4 mo

**Lesson 38: Section 11.2**

2.  $S_p$  \$8,673.69;  
 $S_f$  \$128,351.18  
 8. \$29,565.22

18. \$415.68

**Lesson 39: Section 11.2**

24. \$85.58  
 26. \$6555.17  
 30. 32 regular payments
