Name:_____ **Class:**_____ **Date:**_____

Chapter 2

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Solve for *x*: $-\frac{35}{3}x - ax = 7\left(-\frac{5}{3}x - 1\right) + b$

A) $x = \frac{7-a}{b}$
B) $x = \frac{b-7}{a}$
C) $x = \frac{7-b}{a}$
D) $x = \frac{a-b}{7}$
E) $x = \frac{b-a}{7}$

____ 2. Solve for *x*, rounding your answer to the nearest thousandth.

$2.657 - 1.397(4.193x - 0.27) = 5.968x - 3$

A) 0.003
B) 0.510
C) 0.061
D) –54.668
E) 6.525

____ 3. Solve the following equation.

$\frac{x+4}{5} = \frac{x-3}{9}$

A) $x = -\frac{7}{4}$
B) $x = -\frac{39}{14}$
C) $x = -\frac{19}{4}$
D) $x = -\frac{51}{4}$
E) $x = \frac{3}{2}$

____ 4. Determine any point(s) of intersection between the following equations.

$y = 3 - x$

$y = \frac{6}{5} - \frac{9}{5}x$

A) $\left(-\frac{9}{14}, \frac{3}{2}\right)$

B) $\left(\frac{3}{4}, \frac{9}{4}\right)$

C) $\left(-\frac{9}{4}, \frac{21}{4}\right)$

D) $\left(\frac{15}{4}, -\frac{3}{4}\right)$

E) $\left(\frac{3}{2}, \frac{21}{5}\right)$

____ 5. Simplify $(-4+i)(-9+5i)$ and write the answer in standard form.

A) $-11-29i$

B) $31-49i$

C) $-41-29i$

D) $-41+41i$

E) $31-29i$

____ 6. Simplify $\frac{4+5i}{6i}$ and write the answer in standard form.

A) $-\frac{5}{6} - \frac{2i}{3}$

B) $\frac{5}{6} - \frac{2i}{3}$

C) $\frac{5}{6} + \frac{2i}{3}$

D) $\frac{2}{3} + \frac{5i}{6}$

E) $-\frac{2}{3} + \frac{5i}{6}$

____ 7. Solve $9+4x^2-12x=0$ by factoring.

A) $x = \frac{3}{2}$

B) $x = 2, -3$

C) $x = \frac{3}{2}, -\frac{3}{2}$

D) $x = 3, -2$

E) $x = \frac{2}{3}, -\frac{2}{3}$

____ 8. Find two quadratic equations having the following solutions.

$3+2\sqrt{6},\ 3-2\sqrt{6}$

A) $x^2-6x+24=0;\quad 2x^2-12x+48=0$
B) $x^2-15=0;\quad 2x^2-30=0$
C) $x^2-6x-15=0;\quad 2x^2-12x-30=0$
D) $x^2+12x-15=0;\quad 2x^2+24x-30=0$
E) $x^2-6x+12=0;\quad 2x^2-12x+24=0$

____ 9. Find all solutions of the following equation algebraically.

$$6\left(\frac{r}{r-1}\right)^2-7\left(\frac{r}{r-1}\right)-5=0$$

A) $r=\frac{5}{3},-\frac{1}{2}$
B) $r=3,-1$
C) $r=-\frac{1}{2},-\frac{5}{3}$
D) $r=\frac{5}{2},\frac{1}{3}$
E) $r=5,2$

____ 10. Find all solutions of $\sqrt{x}-\sqrt{x-13}=1$.

A) $x=7$
B) $x=\sqrt{7}$
C) $x=14$
D) $x=49$
E) $x=-7$

____ 11. Find all solutions of the following equation algebraically.

$4m^{2/3}+20m^{1/3}+25=0$

A) $m=-\frac{5}{2}$
B) $m=\frac{25}{4}$
C) $m=-\frac{125}{8}$
D) $m=-\frac{25}{4}$
E) $m=\frac{5}{2}$

____ 12. Find all solutions of the following equation algebraically.

$(x+8)^{2/3} = 4$

A) $x = \sqrt[3]{4} - 8$
B) $x = -4$
C) $x = \sqrt[3]{4} - 64$
D) $x = \frac{1}{8}$
E) $x = 0$

____ 13. Find all solutions of $\left(x^2+7\right)^{3/2} = 64$.

A) $x = \pm 3$
B) $x = \sqrt[3]{7}$
C) $x = -3$
D) $x = 4$
E) $x = \pm\sqrt[3]{7}$

____ 14. Find the *x*-intercepts of the graph of the equation $y = 2x + \sqrt{9 - 35x}$

A) $(9, 0)$
B) $(-9, 0), \left(\frac{1}{4}, 0\right)$
C) $(-9, 0)$
D) $(10, 0), \left(\frac{1}{5}, 0\right)$
E) $(10, 0), \left(\frac{1}{3}, 0\right)$

____ 15. Set $y = 0$ and solve the resulting equation.

$y = 2\sqrt{x} - \frac{20}{\sqrt{x}} - 6$

A) $y = -2, 25$
B) $y = 10$
C) $y = -2, 10$
D) $y = 25$
E) $y = 3$

____ 16. Find all solutions of the following equation.

$|x - 5| = x^2 - 5x$

A) $x = 0, 1$
B) $x = 0, 5$
C) $x = -1, 5$
D) $x = -1, 0$
E) $x = -1$

____ 17. Find all solutions of the following equation.

$x - 8 = \left| x^2 - 8x \right|$

A) $x = 1, 8$
B) $x = -8, 8$
C) $x = -8, 0$
D) $x = 8$
E) $x = 0, 1$

____ 18. Given the following equation, set $y = 0$ and solve the resulting equation.

$y = x + \frac{1}{x+2} + 4$

A) $x = -4$
B) $x = -4, 4$
C) $x = -3, 3$
D) $x = -3$
E) $x = 4$

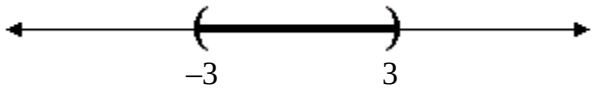
____ 19. Find the *x*-intercepts of the graph of the equation $y = |-7x + 2| - 3$.

A) $\left(\frac{1}{7}, 0\right), \left(-\frac{5}{7}, 0\right)$
B) $\left(-\frac{1}{7}, 0\right), \left(-\frac{5}{7}, 0\right)$
C) $\left(-\frac{1}{7}, 0\right), \left(\frac{1}{7}, 0\right)$
D) $\left(-\frac{5}{7}, 0\right), \left(\frac{5}{7}, 0\right)$
E) $\left(-\frac{1}{7}, 0\right), \left(\frac{5}{7}, 0\right)$

____ 20. Find an equation that has $x = i, -i, -5$, and 4 as solutions.

A) $x^4 + x^3 - 19x^2 + x - 20 = 0$
B) $x^4 + x^3 - 21x^2 + x - 20 = 0$
C) $x^4 + 9x^3 - 19x^2 + x - 20 = 0$
D) $x^4 + 9x^3 - 21x^2 + x - 20 = 0$
E) $x^4 + x^3 - 19x^2 + 9x - 20 = 0$

____ 21. Use absolute value notation to define the interval shown below.



A) $|x+3|<0$
B) $|x|>-3$
C) $|3-x|>0$
D) $|x|<3$
E) $|x-3|>0$

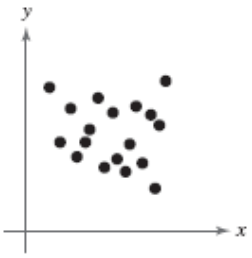
____ 22. Determine the intervals on which the following polynomial is entirely negative and those on which it is entirely positive.

$-x^2-2x+3$

A) entirely negative: $(-\infty,2)$; entirely positive: $(2,\infty)$
B) entirely negative: $(-\infty,-3)$, $(1,2)$; entirely positive: $(-3,2)$
C) entirely negative: $(-\infty,-3)$, $(1,\infty)$; entirely positive: $(-3,1)$
D) entirely negative: $(-3,2)$; entirely positive: $(-\infty,-3)$, $(1,2)$
E) entirely negative: $(-\infty,0)$; entirely positive: $(0,\infty)$

____ 23. Solve: $x^2-5x-14<0$
A) $(-\infty,-5)$
B) $(-2,\infty)$
C) $(-2,7)$
D) $(-\infty,7)$
E) $(7,\infty)$

____ 24. Determine whether there is positive correlation, negative correlation, or no discernible correlation between the variables shown in the scatter plot below.



A) positive correlation
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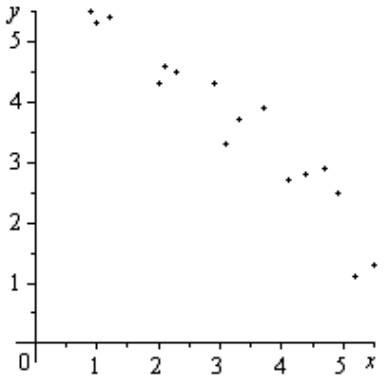
____ 25. The scatter plots of different data are shown below. Determine whether there is a positive correlation, negative correlation, or no discernible correlation between the variables.



A) negative correlation
B) no discernible correlation
C) positive correlation

Chapter 2
Answer Section

MULTIPLE CHOICE

1. ANS: C PTS: 1
2. ANS: B PTS: 1
3. ANS: D PTS: 1
4. ANS: C PTS: 1
5. ANS: E PTS: 1
6. ANS: B PTS: 1
7. ANS: A PTS: 1
8. ANS: C PTS: 1
9. ANS: D PTS: 1
10. ANS: D PTS: 1
11. ANS: C PTS: 1
12. ANS: E PTS: 1
13. ANS: A PTS: 1
14. ANS: C PTS: 1
15. ANS: D PTS: 1
16. ANS: C PTS: 1
17. ANS: D PTS: 1
18. ANS: D PTS: 1
19. ANS: E PTS: 1
20. ANS: A PTS: 1
21. ANS: D PTS: 1
22. ANS: C PTS: 1
23. ANS: C PTS: 1
24. ANS: C PTS: 1
25. ANS: A PTS: 1

Name:_____ **Class:**_____ **Date:**_____

Chapter 2

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Solve for *x*: $\frac{16}{3}x - ax = 8\left(\frac{2}{3}x - 1\right) + b$

A) $x = \frac{b-8}{a}$
B) $x = \frac{a-b}{8}$
C) $x = \frac{8-a}{b}$
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E) $x = \pm\sqrt[3]{7}$

____ 14. Find the *x*-intercepts of the graph of the equation $y = 2x + \sqrt{9 - 35x}$

A) $(9, 0)$
B) $(-9, 0), \left(\frac{1}{4}, 0\right)$
C) $(-9, 0)$
D) $(10, 0), \left(\frac{1}{5}, 0\right)$
E) $(10, 0), \left(\frac{1}{3}, 0\right)$

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B) $x = 0, 5$
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C) $\left(-\frac{1}{7}, 0\right), \left(\frac{1}{7}, 0\right)$
D) $\left(-\frac{5}{7}, 0\right), \left(\frac{5}{7}, 0\right)$
E) $\left(-\frac{1}{7}, 0\right), \left(\frac{5}{7}, 0\right)$

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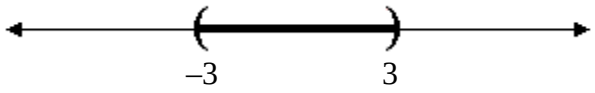

A) $|x+3|<0$
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D) $|x|<3$
E) $|x-3|>0$

____ 22. Determine the intervals on which the following polynomial is entirely negative and those on which it is entirely positive.

$-x^2-2x+3$

A) entirely negative: $(-\infty,2)$; entirely positive: $(2,\infty)$
B) entirely negative: $(-\infty,-3)$, $(1,2)$; entirely positive: $(-3,2)$
C) entirely negative: $(-\infty,-3)$, $(1,\infty)$; entirely positive: $(-3,1)$
D) entirely negative: $(-3,2)$; entirely positive: $(-\infty,-3)$, $(1,2)$
E) entirely negative: $(-\infty,0)$; entirely positive: $(0,\infty)$

____ 23. Solve: $x^2-5x-14<0$
A) $(-\infty,-5)$
B) $(-2,\infty)$
C) $(-2,7)$
D) $(-\infty,7)$
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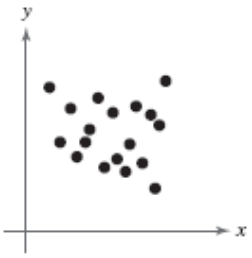
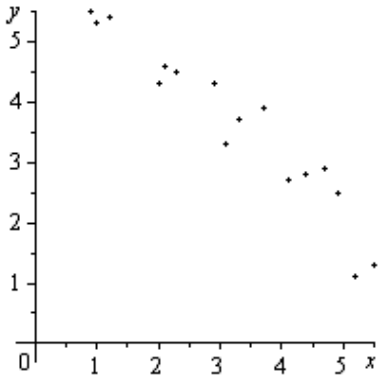
____ 24. Determine whether there is positive correlation, negative correlation, or no discernible correlation between the variables shown in the scatter plot below.



A) positive correlation
B) negative correlation
C) no discernable correlation

____ 25. The scatter plots of different data are shown below. Determine whether there is a positive correlation, negative correlation, or no discernible correlation between the variables.



A) negative correlation
B) no discernible correlation
C) positive correlation

Chapter 2
Answer Section

MULTIPLE CHOICE

1.	ANS: D	PTS: 1	DIF:	Medium	REF:	41-56
2.	ANS: B	PTS: 1	DIF:	Medium	REF:	21-34
3.	ANS: D	PTS: 1	DIF:	Medium	REF:	21-34
4.	ANS: C	PTS: 1	DIF:	Medium	REF:	57-64
5.	ANS: E	PTS: 1	DIF:	Medium	REF:	25-36
6.	ANS: B	PTS: 1	DIF:	Medium	REF:	45-52
7.	ANS: A	PTS: 1	DIF:	Medium	REF:	5-14
8.	ANS: C	PTS: 1	DIF:	Medium	REF:	67-76
9.	ANS: D	PTS: 1	DIF:	Medium	REF:	1-14
10.	ANS: D	PTS: 1	DIF:	Medium	REF:	19-48
11.	ANS: C	PTS: 1	DIF:	Medium	REF:	19-48
12.	ANS: E	PTS: 1	DIF:	Medium	REF:	19-48
13.	ANS: A	PTS: 1	DIF:	Medium	REF:	19-48
14.	ANS: C	PTS: 1	DIF:	Medium	REF:	49-52
15.	ANS: D	PTS: 1	DIF:	Medium	REF:	49-52
16.	ANS: C	PTS: 1	DIF:	Difficult	REF:	53-66
17.	ANS: D	PTS: 1	DIF:	Difficult	REF:	53-66
18.	ANS: D	PTS: 1	DIF:	Medium	REF:	67-70
19.	ANS: E	PTS: 1	DIF:	Medium	REF:	67-70
20.	ANS: A	PTS: 1	DIF:	Medium	REF:	87-92
21.	ANS: D	PTS: 1	DIF:	Medium	REF:	39-46
22.	ANS: C	PTS: 1	DIF:	Medium	REF:	47-52
23.	ANS: C	PTS: 1	DIF:	Medium	REF:	53-62
24.	ANS: C	PTS: 1	DIF:	Easy	REF:	3-6
25.	ANS: A	PTS: 1	DIF:	Easy	REF:	3-6

Name:_____ **Class:**_____ **Date:**_____

Chapter 2

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Solve for *x*: $\frac{32}{3}x - ax = 8\left(\frac{4}{3}x - 1\right) + b$

A) $x = \frac{b-8}{a}$
B) $x = \frac{8-b}{a}$
C) $x = \frac{b-a}{8}$
D) $x = \frac{a-b}{8}$
E) $x = \frac{8-a}{b}$

____ 2. Solve for *x*, rounding your answer to the nearest thousandth.

$2.761 + 1.765(4.193x - 3.006) = 6.478x - 3$

A) –0.494
B) –0.033
C) 5.491
D) –0.365
E) 6.009

____ 3. Solve the following equation.

$\frac{x+5}{2} = \frac{x-2}{7}$

A) $x = \frac{31}{9}$
B) $x = -\frac{7}{5}$
C) $x = -\frac{9}{5}$
D) $x = -\frac{39}{5}$
E) $x = -\frac{37}{9}$

____ 4. Determine any point(s) of intersection between the following equations.

$y = 5 - x$

$y = \frac{4}{3} - \frac{10}{3}x$

A) $\left(\frac{19}{13}, \frac{46}{3}\right)$

B) $\left(\frac{15}{7}, \frac{20}{7}\right)$

C) $\left(-\frac{11}{13}, \frac{46}{13}\right)$

D) $\left(-\frac{1}{7}, \frac{36}{7}\right)$

E) $\left(-\frac{11}{7}, \frac{46}{7}\right)$

____ 5. Simplify $(-4+i)(-9-11i)$ and write the answer in standard form.

A) $47+95i$

B) $47+35i$

C) $53+35i$

D) $103+25i$

E) $103+35i$

____ 6. Simplify $\frac{-8-5i}{7i}$ and write the answer in standard form.

A) $-\frac{5}{7} - \frac{8i}{7}$

B) $-\frac{5}{7} + \frac{8i}{7}$

C) $\frac{5}{7} + \frac{8i}{7}$

D) $\frac{8}{7} - \frac{5i}{7}$

E) $-\frac{8}{7} - \frac{5i}{7}$

____ 7. Solve $9 + 16x^2 - 24x = 0$ by factoring.

A) $x = \frac{3}{4}$

B) $x = \frac{3}{4}, -\frac{3}{4}$

C) $x = -3, 4$

D) $x = \frac{4}{3}, -\frac{4}{3}$

E) $x = -4, 3$

____ 8. Find two quadratic equations having the following solutions.

$1+2\sqrt{6},\ 1-2\sqrt{6}$

A) $x^2-2x+24=0;\ \ -2x^2+4x-48=0$
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D) $x^2-23=0;\ \ -2x^2+46=0$
E) $x^2+12x-23=0;\ \ -2x^2-24x+46=0$

____ 9. Find all solutions of the following equation algebraically.

$$-25\left(\frac{n}{n-1}\right)^2-30\left(\frac{n}{n-1}\right)-9=0$$

A) $n=-5,-3$
B) $n=\frac{3}{8},\frac{3}{8}$
C) $n=3,5$
D) $n=-\frac{3}{8},-\frac{3}{8}$
E) $n=-\frac{3}{5},-\frac{3}{5}$

____ 10. Find all solutions of $\sqrt{x}-\sqrt{x-9}=1$.

A) $x=-5$
B) $x=10$
C) $x=5$
D) $x=\sqrt{5}$
E) $x=25$

____ 11. Find all solutions of the following equation algebraically.

$9z^{2/3}+42z^{1/3}+49=0$

A) $z=-\frac{49}{9}$
B) $z=\frac{7}{3}$
C) $z=\frac{49}{9}$
D) $z=-\frac{7}{3}$
E) $z=-\frac{343}{27}$

____ 12. Find all solutions of the following equation algebraically.

$(x-3)^{2/3} = 25$

A) $x = \sqrt[3]{25} + 3$
B) $x = 28$
C) $x = \sqrt[3]{25} - 9$
D) $x = 128$
E) $x = \frac{125}{9}$

____ 13. Find all solutions of $\left(x^2+5\right)^{3/2} = 27$.

A) $x = \sqrt[3]{5}$
B) $x = -2$
C) $x = 3$
D) $x = \pm 2$
E) $x = \pm\sqrt[3]{5}$

____ 14. Find the *x*-intercepts of the graph of the equation $y = 5x + \sqrt{6-149x}$

A) $(6, 0)$
B) $(7, 0), \left(\frac{1}{26}, 0\right)$
C) $(-6, 0), \left(\frac{1}{25}, 0\right)$
D) $(7, 0), \left(\frac{1}{24}, 0\right)$
E) $(-6, 0)$

____ 15. Set $y = 0$ and solve the resulting equation.

$y = 3\sqrt{x} - \frac{15}{\sqrt{x}} - 12$

A) $y = -1, 25$
B) $y = 1$
C) $y = 5$
D) $y = -1, 5$
E) $y = 25$

____ 16. Find all solutions of the following equation.

$|x-9| = x^2 - 9x$

A) $x = -1, 0$
B) $x = -1$
C) $x = 0, 9$
D) $x = -1, 9$
E) $x = 0, 1$

____ 17. Find all solutions of the following equation.

$$x - 4 = \left| x^2 - 4x \right|$$

A) $x = 1, 4$
B) $x = -4, 0$
C) $x = 0, 1$
D) $x = 4$
E) $x = -4, 4$

____ 18. Given the following equation, set $y = 0$ and solve the resulting equation.

$$y = x + \frac{1}{x+8} + 10$$

A) $x = -10, 10$
B) $x = -9$
C) $x = -10$
D) $x = -9, 9$
E) $x = 10$

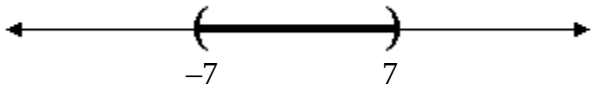
____ 19. Find the *x*-intercepts of the graph of the equation $y = |-10x - 7| - 6$.

A) $\left(-\frac{13}{10}, 0\right), \left(\frac{13}{10}, 0\right)$
B) $\left(\frac{13}{10}, 0\right), \left(\frac{1}{10}, 0\right)$
C) $\left(-\frac{13}{10}, 0\right), \left(\frac{1}{10}, 0\right)$
D) $\left(-\frac{13}{10}, 0\right), \left(-\frac{1}{10}, 0\right)$
E) $\left(\frac{1}{10}, 0\right), \left(-\frac{1}{10}, 0\right)$

____ 20. Find an equation that has $x = i, -i$, 2, and –5 as solutions.

A) $x^4 - 7x^3 - 9x^2 + 3x - 10 = 0$
B) $x^4 + 3x^3 - 11x^2 + 3x - 10 = 0$
C) $x^4 - 7x^3 - 11x^2 + 3x - 10 = 0$
D) $x^4 + 3x^3 - 9x^2 + 3x - 10 = 0$
E) $x^4 + 3x^3 - 9x^2 - 7x - 10 = 0$

____ 21. Use absolute value notation to define the interval shown below.



A) $|x+7|<0$
B) $|x|<7$
C) $|x-7|>0$
D) $|x|>-7$
E) $|7-x|>0$

____ 22. Determine the intervals on which the following polynomial is entirely negative and those on which it is entirely positive.

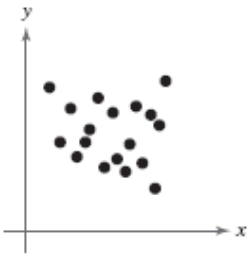
$-x^2-6x+7$

A) entirely negative: $(-7,4)$; entirely positive: $(-\infty,-7)$, $(1,4)$
B) entirely negative: $(-\infty,0)$; entirely positive: $(0,\infty)$
C) entirely negative: $(-\infty,-7)$, $(1,\infty)$; entirely positive: $(-7,1)$
D) entirely negative: $(-\infty,4)$; entirely positive: $(4,\infty)$
E) entirely negative: $(-\infty,-7)$, $(1,4)$; entirely positive: $(-7,4)$

____ 23. Solve: $x^2-2x-24<0$

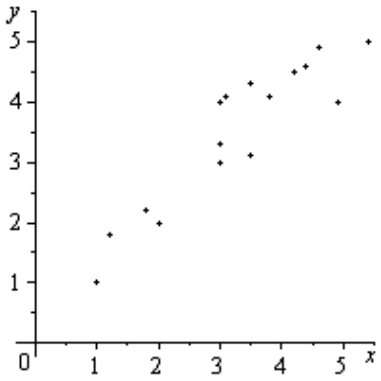
A) $(-\infty,6)$
B) $(-4,6)$
C) $(-\infty,-2)$
D) $(-4,\infty)$
E) $(6,\infty)$

____ 24. Determine whether there is positive correlation, negative correlation, or no discernible correlation between the variables shown in the scatter plot below.



A) negative correlation
B) positive correlation
C) no discernable correlation

____ 25. The scatter plots of different data are shown below. Determine whether there is a positive correlation, negative correlation, or no discernible correlation between the variables.



A) no discernible correlation
B) negative correlation
C) positive correlation

Chapter 2
Answer Section

MULTIPLE CHOICE

1. ANS: B PTS: 1
2. ANS: A PTS: 1
3. ANS: D PTS: 1
4. ANS: E PTS: 1
5. ANS: B PTS: 1
6. ANS: B PTS: 1
7. ANS: A PTS: 1
8. ANS: C PTS: 1
9. ANS: B PTS: 1
10. ANS: E PTS: 1
11. ANS: E PTS: 1
12. ANS: D PTS: 1
13. ANS: D PTS: 1
14. ANS: E PTS: 1
15. ANS: E PTS: 1
16. ANS: D PTS: 1
17. ANS: D PTS: 1
18. ANS: B PTS: 1
19. ANS: D PTS: 1
20. ANS: D PTS: 1
21. ANS: B PTS: 1
22. ANS: C PTS: 1
23. ANS: B PTS: 1
24. ANS: C PTS: 1
25. ANS: C PTS: 1

Name:_____ **Class:**_____ **Date:**_____

Chapter 2

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Solve: $-5(x-5)=-2(2-x)-2$

A) $x=\frac{1}{4}$

B) $x=-\frac{19}{3}$

C) $x=\frac{31}{4}$

D) $x=\frac{31}{7}$

E) $x=-\frac{19}{7}$

____ 2. Solve: $-\frac{7}{3x+1}-\frac{12x}{3x-1}=-4$

A) $x=\frac{1}{3}$

B) $x=\frac{1}{11}$

C) $x=\frac{3}{19}$

D) $x=-\frac{1}{3}$

E) $x=\frac{11}{3}$

____ 3. Which of the following is a zero of the given function?

$f(x)=\frac{x+10}{3}-\frac{x+5}{7}+6$

$x=-\frac{211}{4}$, $x=\frac{71}{4}$, $x=\frac{181}{10}$, $x=-\frac{181}{4}$

A) $x=\frac{71}{4}$

B) $x=-\frac{181}{4}$

C) $x=\frac{181}{10}$

D) $x=-\frac{211}{4}$

E) none of these

____ 4. Which of the following is a zero of the given function?

$f(x) = x + 4 - \frac{5}{x}$

$x = -1,\ x = -5,\ x = -6,\ x = 4$

A) $x = -5$
B) $x = -1$
C) $x = -6$
D) $x = 4$
E) none of these

____ 5. Solve the following equation.

$\frac{x+5}{5} = \frac{x-2}{7}$

A) $x = -\frac{37}{12}$
B) $x = -\frac{15}{2}$
C) $x = -\frac{7}{2}$
D) $x = \frac{25}{12}$
E) $x = -\frac{45}{2}$

____ 6. Solve the following equation.

$(x+8)^2 + 14(x+14) = (x+8)(x+14)$

A) $x = -\frac{10}{7}$
B) $x = -22$
C) $x = -\frac{74}{7}$
D) $x = -\frac{37}{2}$
E) $x = \frac{61}{2}$

____ 7. Determine any point(s) of intersection between the following equations.

$y = 2 - x$

$y = \frac{5}{4} - \frac{11}{4}x$

A) $\left(-\frac{3}{7}, \frac{17}{7}\right)$

B) $\left(\frac{3}{7}, \frac{11}{7}\right)$

C) $\left(\frac{8}{7}, \frac{6}{7}\right)$

D) $\left(\frac{13}{15}, \frac{17}{4}\right)$

E) $\left(-\frac{1}{5}, \frac{17}{15}\right)$

____ 8. Simplify $(3+i)(4+9i)$ and write the answer in standard form.

A) $23+31i$

B) $33+21i$

C) $33+31i$

D) $3+31i$

E) $3+39i$

____ 9. Simplify $\frac{3+i}{5+2i}$ and write the answer in standard form.

A) $\frac{17}{29}+\frac{1}{29}i$

B) $\frac{17}{29}-\frac{1}{29}i$

C) $-\frac{17}{29}-\frac{1}{29}i$

D) $-\frac{1}{29}+\frac{17}{29}i$

E) $-\frac{1}{29}-\frac{17}{29}i$

____ 10. Simplify $\left(\sqrt{-3}\right)^9$ and write the answer in standard form.

A) $-81\sqrt{3}i$

B) The expression cannot be simplified.

C) $81\sqrt{3}$

D) $81\sqrt{3}i$

E) $6561\sqrt{3}i$

____ 11. Solve $4+9x^2+12x=0$ by factoring.

A) $x=-\frac{2}{3}$

B) $x=-\frac{3}{2},\frac{3}{2}$

C) $x=-\frac{2}{3},\frac{2}{3}$

D) $x=2,3$

E) $x=-3,-2$

____ 12. Solve the following quadratic equation by factoring.

$(w+a)^2-16b^2=0$

A) $w=a,-16b$

B) $w=a-4b,a+4b$

C) $w=-a,16b$

D) $w=-a+4b,-a-4b$

E) $w=-a+4b,a+4b$

____ 13. Solve $0=4x^2+20x+20$ using the quadratic formula.

A) $x=\frac{-5\pm\sqrt{5}}{2}$

B) $x=\frac{5}{2}$

C) $x=\frac{-2\pm\sqrt{5}}{5}$

D) $x=\frac{5\pm\sqrt{5}}{2}$

E) $x=\frac{\pm\sqrt{5}}{2}$

____ 14. Solve the following equation using any convenient method.

$(x+9)^2=-100$

A) $x=-10\pm9i$

B) $x=-100,10$

C) $x=-9\pm10i$

D) $x=-100,-9$

E) $x=-9,10$

____ 15. Find all solutions of $\frac{1}{x^2}+\frac{8}{x}+15=0$.

A) $x=-5,\ 3$
B) $x=-\frac{1}{8},\ \frac{1}{2}$
C) $x=-5,\ -3$
D) $x=-\frac{1}{5},\ -\frac{1}{3}$
E) $x=\frac{1}{8},\ -\frac{1}{2}$

____ 16. Find all solutions of the following equation algebraically.

$4\sqrt{x-3}-\sqrt{x+7}=0$

A) $x=\frac{2}{3}$
B) $x=\frac{3}{7}$
C) $x=\frac{19}{7}$
D) $x=\frac{11}{3}$
E) $x=\frac{19}{3}$

____ 17. Find all solutions of the following equation algebraically.

$(x+4)^{2/3}=4$

A) $x=\frac{1}{2}$
B) $x=4$
C) $x=0$
D) $x=\sqrt[3]{4}-16$
E) $x=\sqrt[3]{4}-4$

____ 18. Find the *x*-intercepts of the graph of the equation $y=7x+\sqrt{8-391x}$

A) $(8,0)$
B) $(-8,0),\ \left(\frac{1}{49},0\right)$
C) $(9,0),\ \left(\frac{1}{48},0\right)$
D) $(9,0),\ \left(\frac{1}{50},0\right)$
E) $(-8,0)$

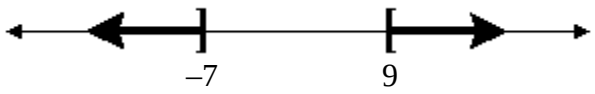
____ 19. Set $y = 0$ and solve the resulting equation.

$$y = 2\sqrt{x} - \frac{20}{\sqrt{x}} - 6$$

A) $y = 3$
B) $y = -2,\ 10$
C) $y = -2,\ 25$
D) $y = 25$
E) $y = 10$

____ 20. Solve: $5(x - 2) > 5x - 5$
A) $x < -2$
B) no solution
C) $-5 < x < 2$
D) $x > 5$
E) $x \leq -8$

____ 21. Use absolute value notation to define the interval shown below.



A) $8 - |x + 1| \leq 0$
B) $|x + 1| - 8 \geq 0$
C) $|x - 1| - 8 \geq 0$
D) $-7 \leq x \leq 9$
E) $|-1 - x| \geq 8$

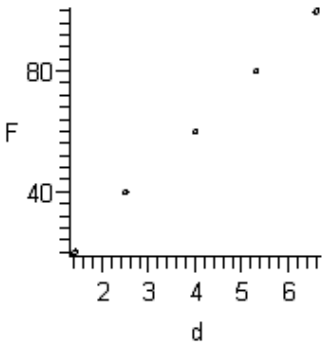
____ 22. Solve the inequality $16x - x^3 < 0$ and write the solution set in interval notation.
A) $(-4, 4)$
B) $(-\infty, -4) \cup (0, 4)$
C) $(-\infty, 4)$
D) $(-4, 0) \cup (4, \infty)$
E) $(-\infty, \infty)$

____ 23. Hooke's Law states that the force F required to compress or stretch a spring (within its elastic limits) is proportional to the distance d that the spring is compressed or stretched from its original length. That is, $F = kd$ where k is the measure of the stiffness of the spring and is called the *spring constant*. The table below shows the elongation d in centimeters of a spring when a force of F kilograms is applied.

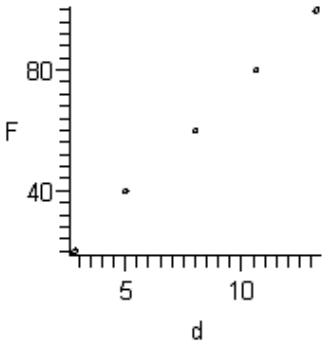
Force, *F*	**Elongation, *d***
20	2.1
40	3.8
60	6.0
80	8.0
100	9.9

Sketch a scatter plot of the data.

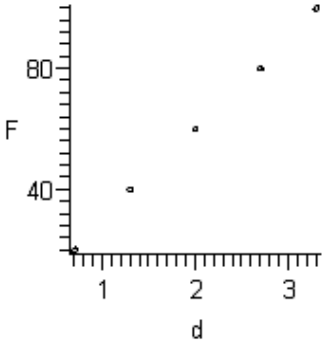
A)



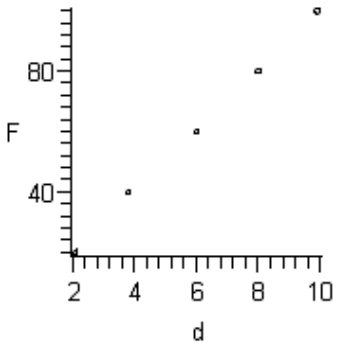
B)



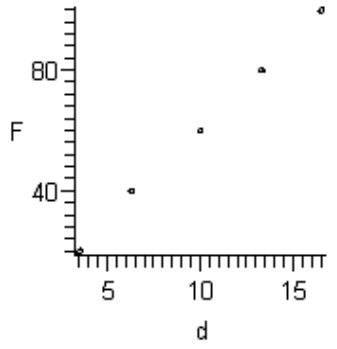
C)



D)



E)



____ 24. Hooke's Law states that the force F required to compress or stretch a spring (within its elastic limits) is proportional to the distance d that the spring is compressed or stretched from its original length. That is, $F = kd$ where k is the measure of the stiffness of the spring and is called the *spring constant*. The table below shows the elongation d in centimeters of a spring when a force of F kilograms is applied.

Force, *F*	**Elongation, *d***
20	2.8
40	5.0
60	8.0
80	10.6
100	13.2

Find the equation of the line that seems to best fit the data. Use the model to estimate the elongation of the spring when a force of 30 kilograms is applied. Round your answer to one decimal place.

A) 6.0 centimeters
B) 4.0 centimeters
C) 8.0 centimeters
D) 3.0 centimeters
E) 2.0 centimeters

____ 25. The average lengths L of cellular phone calls in minutes from 1999 to 2004 are shown in the table below.

Year	**Average length, *L* (in minutes)**
1999	2.38
2000	2.56
2001	2.74
2002	2.73
2003	2.87
2004	3.05

Use the *regression* feature of a graphing utility to find a linear model for the data. Let t represent the year, with $t = 9$ corresponding to 1999. Use the model to predict the average lengths of cellular phone calls for the year 2010. Round your answer to two decimal places.

A) 7.52 minutes
B) 2.76 minutes
C) 4.76 minutes
D) 1.88 minutes
E) 3.76 minutes

Chapter 2
Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1
2. ANS: B PTS: 1
3. ANS: B PTS: 1
4. ANS: A PTS: 1
5. ANS: E PTS: 1
6. ANS: D PTS: 1
7. ANS: A PTS: 1
8. ANS: D PTS: 1
9. ANS: B PTS: 1
10. ANS: D PTS: 1
11. ANS: A PTS: 1
12. ANS: D PTS: 1
13. ANS: A PTS: 1
14. ANS: C PTS: 1
15. ANS: D PTS: 1
16. ANS: D PTS: 1
17. ANS: B PTS: 1
18. ANS: E PTS: 1
19. ANS: D PTS: 1
20. ANS: B PTS: 1
21. ANS: C PTS: 1
22. ANS: D PTS: 1
23. ANS: D PTS: 1
24. ANS: B PTS: 1
25. ANS: E PTS: 1

Name:_____ **Class:**_____ **Date:**_____

Chapter 2

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Solve: $-7(x-7)=-3(2-x)-2$

A) $x=\frac{57}{10}$

B) $x=\frac{19}{2}$

C) $x=-\frac{41}{4}$

D) $x=\frac{1}{6}$

E) $x=-\frac{41}{10}$

____ 2. Solve: $\frac{2}{3x+1}-\frac{24x}{3x-1}=-8$

A) $x=-\frac{5}{9}$

B) $x=-\frac{5}{11}$

C) $x=\frac{1}{3}$

D) $x=-\frac{3}{5}$

E) $x=-\frac{1}{3}$

____ 3. Which of the following is a zero of the given function?

$f(x)=\frac{x+4}{3}-\frac{x-5}{5}+4$

$x=-\frac{65}{2}$, $x=\frac{25}{2}$, $x=\frac{95}{8}$, $x=-\frac{95}{2}$

A) $x=-\frac{65}{2}$

B) $x=-\frac{95}{2}$

C) $x=\frac{25}{2}$

D) $x=\frac{95}{8}$

E) none of these

____ 4. Which of the following is a zero of the given function?

$f(x) = x - 4 - \frac{12}{x}$

$x = -6,\ x = -2,\ x = -8,\ x = -4$

A) $x = -6$
B) $x = -2$
C) $x = -4$
D) $x = -8$
E) none of these

____ 5. Solve the following equation.

$\frac{x+6}{5} = \frac{x-7}{9}$

A) $x = -\frac{61}{14}$
B) $x = \frac{19}{14}$
C) $x = -\frac{41}{4}$
D) $x = -\frac{89}{4}$
E) $x = -\frac{13}{4}$

____ 6. Solve the following equation.

$(x+16)^2 + 18(x+18) = (x+16)(x+18)$

A) $x = \frac{89}{4}$
B) $x = -\frac{73}{4}$
C) $x = \frac{110}{9}$
D) $x = -\frac{146}{9}$
E) $x = -34$

____ 7. Determine any point(s) of intersection between the following equations.

$y = 5 - x$

$y = \frac{4}{3} - \frac{10}{3}x$

A) $\left(-\frac{11}{7}, \frac{46}{7}\right)$

B) $\left(\frac{15}{7}, \frac{20}{7}\right)$

C) $\left(-\frac{11}{13}, \frac{46}{13}\right)$

D) $\left(\frac{19}{13}, \frac{46}{3}\right)$

E) $\left(-\frac{1}{7}, \frac{36}{7}\right)$

____ 8. Simplify $(-4+i)(-7-8i)$ and write the answer in standard form.

A) $60+20i$

B) $36+52i$

C) $39+25i$

D) $36+25i$

E) $60+25i$

____ 9. Simplify $\frac{7+3i}{5+6i}$ and write the answer in standard form.

A) $-\frac{27}{61}+\frac{53}{61}i$

B) $-\frac{53}{61}-\frac{27}{61}i$

C) $\frac{53}{61}-\frac{27}{61}i$

D) $\frac{53}{61}+\frac{27}{61}i$

E) $-\frac{27}{61}-\frac{53}{61}i$

____ 10. Simplify $\left(\sqrt{-3}\right)^7$ and write the answer in standard form.

A) $-27\sqrt{3}$

B) The expression cannot be simplified.

C) $27\sqrt{3}i$

D) $-27\sqrt{3}i$

E) $729\sqrt{3}i$

____ 11. Solve $4+9x^2+12x=0$ by factoring.

A) $x=-3,-2$

B) $x=-\frac{2}{3}$

C) $x=2,3$

D) $x=-\frac{2}{3},\frac{2}{3}$

E) $x=-\frac{3}{2},\frac{3}{2}$

____ 12. Solve the following quadratic equation by factoring.

$(v+a)^2-25b^2=0$

A) $v=-a+5b,a+5b$

B) $v=a-5b,a+5b$

C) $v=a,-25b$

D) $v=-a+5b,-a-5b$

E) $v=-a,25b$

____ 13. Solve $0=64x^2+80x+20$ using the quadratic formula.

A) $x=\frac{-5\pm\sqrt{5}}{8}$

B) $x=\frac{5}{8}$

C) $x=\frac{-8\pm\sqrt{5}}{5}$

D) $x=\frac{5\pm\sqrt{5}}{8}$

E) $x=\frac{\pm\sqrt{5}}{8}$

____ 14. Solve the following equation using any convenient method.

$(x-8)^2=-81$

A) $x=-81,8$

B) $x=8,9$

C) $x=-9\pm8i$

D) $x=8\pm9i$

E) $x=-81,9$

____ 15. Find all solutions of $\frac{1}{x^2}+\frac{8}{x}+15=0$.

A) $x=-\frac{1}{8},\frac{1}{2}$

B) $x=-5,-3$

C) $x=\frac{1}{8},-\frac{1}{2}$

D) $x=-\frac{1}{5},-\frac{1}{3}$

E) $x=-5,3$

____ 16. Find all solutions of the following equation algebraically.

$4\sqrt{x-10}-\sqrt{x+6}=0$

A) $x=\frac{46}{3}$

B) $x=\frac{23}{7}$

C) $x=\frac{16}{15}$

D) $x=\frac{1}{7}$

E) $x=\frac{166}{15}$

____ 17. Find all solutions of the following equation algebraically.

$(x-6)^{2/3}=9$

A) $x=\sqrt[3]{9}-36$

B) $x=33$

C) $x=15$

D) $x=\sqrt[3]{9}+6$

E) $x=\frac{3}{4}$

____ 18. Find the *x*-intercepts of the graph of the equation $y=2x+\sqrt{4-15x}$

A) $(-4,0)$

B) $(-4,0),\left(\frac{1}{4},0\right)$

C) $(4,0)$

D) $(5,0),\left(\frac{1}{5},0\right)$

E) $(5,0),\left(\frac{1}{3},0\right)$

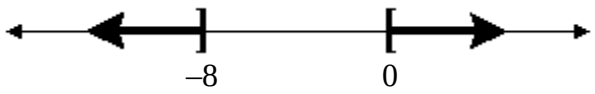
____ 19. Set $y = 0$ and solve the resulting equation.

$$y = 2\sqrt{x} - \frac{6}{\sqrt{x}} - 4$$

A) $y = 9$
B) $y = 3$
C) $y = 1$
D) $y = -1, 9$
E) $y = -1, 3$

____ 20. Solve: $7(x - 6) > 7x - 35$
A) no solution
B) $x < -6$
C) $x \leq -36$
D) $x > 7$
E) $-7 < x < 6$

____ 21. Use absolute value notation to define the interval shown below.



A) $|x - 4| - 4 \geq 0$
B) $|4 - x| \geq 4$
C) $4 - |x - 4| \leq 0$
D) $-8 \leq x \leq 0$
E) $|x + 4| - 4 \geq 0$

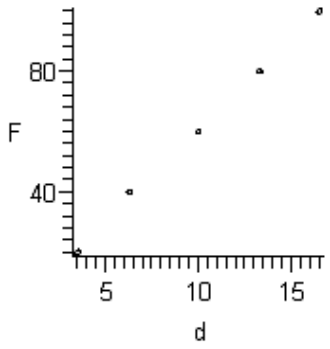
____ 22. Solve the inequality $16x - x^3 < 0$ and write the solution set in interval notation.
A) $(-\infty, 4)$
B) $(-\infty, -4) \cup (0, 4)$
C) $(-4, 0) \cup (4, \infty)$
D) $(-\infty, \infty)$
E) $(-4, 4)$

____ 23. Hooke's Law states that the force F required to compress or stretch a spring (within its elastic limits) is proportional to the distance d that the spring is compressed or stretched from its original length. That is, $F = kd$ where k is the measure of the stiffness of the spring and is called the *spring constant*. The table below shows the elongation d in centimeters of a spring when a force of F kilograms is applied.

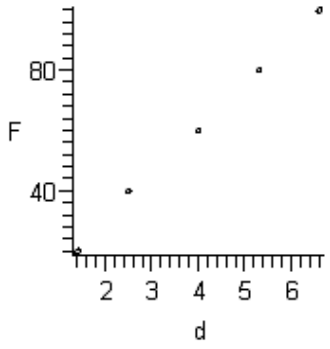
Force, *F*	**Elongation, *d***
20	1.4
40	2.5
60	4.0
80	5.3
100	6.6

Sketch a scatter plot of the data.

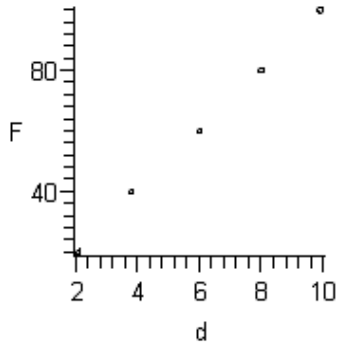
A)



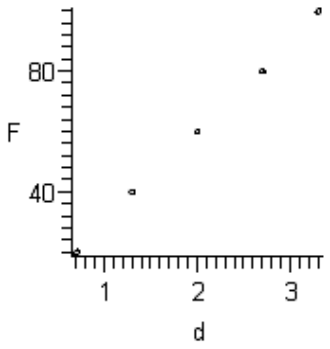
B)



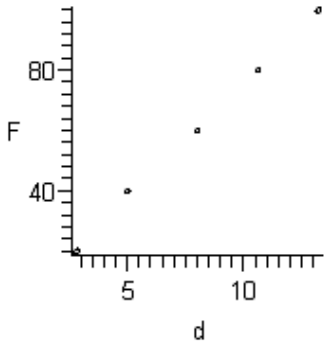
C)



D)



E)



____ 24. Hooke's Law states that the force F required to compress or stretch a spring (within its elastic limits) is proportional to the distance d that the spring is compressed or stretched from its original length. That is, $F = kd$ where k is the measure of the stiffness of the spring and is called the *spring constant*. The table below shows the elongation d in centimeters of a spring when a force of F kilograms is applied.

Force, *F*	**Elongation, *d***
20	3.5
40	6.3
60	10.0
80	13.3
100	16.5

Find the equation of the line that seems to best fit the data. Use the model to estimate the elongation of the spring when a force of 35 kilograms is applied. Round your answer to one decimal place.

A) 2.9 centimeters
B) 8.7 centimeters
C) 4.4 centimeters
D) 5.8 centimeters
E) 11.6 centimeters

____ 25. The average lengths L of cellular phone calls in minutes from 1999 to 2004 are shown in the table below.

Year	**Average length, *L* (in minutes)**
1999	2.38
2000	2.56
2001	2.74
2002	2.73
2003	2.87
2004	3.05

Use the *regression* feature of a graphing utility to find a linear model for the data. Let t represent the year, with $t = 9$ corresponding to 1999. Use the model to predict the average lengths of cellular phone calls for the year 2006. Round your answer to two decimal places.

A) 6.54 minutes
B) 1.64 minutes
C) 2.27 minutes
D) 4.27 minutes
E) 3.27 minutes

Chapter 2
Answer Section

MULTIPLE CHOICE

1. ANS: A PTS: 1
2. ANS: A PTS: 1
3. ANS: B PTS: 1
4. ANS: B PTS: 1
5. ANS: D PTS: 1
6. ANS: B PTS: 1
7. ANS: A PTS: 1
8. ANS: D PTS: 1
9. ANS: C PTS: 1
10. ANS: D PTS: 1
11. ANS: B PTS: 1
12. ANS: D PTS: 1
13. ANS: A PTS: 1
14. ANS: D PTS: 1
15. ANS: D PTS: 1
16. ANS: E PTS: 1
17. ANS: B PTS: 1
18. ANS: A PTS: 1
19. ANS: A PTS: 1
20. ANS: A PTS: 1
21. ANS: E PTS: 1
22. ANS: C PTS: 1
23. ANS: B PTS: 1
24. ANS: D PTS: 1
25. ANS: E PTS: 1

Name:_____ **Class:**_____ **Date:**_____

Chapter 2

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. Solve: $-9(x-9)=-5(2-x)-2$

A) $x=-\frac{69}{4}$

B) $x=\frac{3}{8}$

C) $x=\frac{93}{14}$

D) $x=-\frac{69}{14}$

E) $x=\frac{93}{8}$

____ 2. Solve: $\frac{7}{3x+1}-\frac{18x}{3x-1}=-6$

A) $x=-\frac{13}{11}$

B) $x=\frac{13}{3}$

C) $x=\frac{1}{13}$

D) $x=\frac{1}{3}$

E) $x=-\frac{1}{3}$

____ 3. Which of the following is a zero of the given function?

$f(x)=\frac{x-3}{2}-\frac{x+4}{6}+6$

$x=-\frac{31}{2}$, $x=\frac{49}{2}$, $x=\frac{23}{4}$, $x=-\frac{23}{2}$

A) $x=-\frac{31}{2}$

B) $x=-\frac{23}{2}$

C) $x=\frac{23}{4}$

D) $x=\frac{49}{2}$

E) none of these

____ 4. Which of the following is a zero of the given function?

$f(x) = x - 5 - \frac{14}{x}$

$x = -7,\ x = -2,\ x = -9,\ x = -5$

A) $x = -2$
B) $x = -5$
C) $x = -7$
D) $x = -9$
E) none of these

____ 5. Solve the following equation.

$\frac{x+4}{4} = \frac{x-8}{9}$

A) $x = \frac{4}{13}$
B) $x = -\frac{44}{13}$
C) $x = -\frac{12}{5}$
D) $x = -\frac{36}{5}$
E) $x = -\frac{68}{5}$

____ 6. Solve the following equation.

$(x+18)^2 - 16(x-16) = (x+18)(x-16)$

A) $x = -\frac{434}{9}$
B) $x = -\frac{178}{9}$
C) $x = -2$
D) $x = \frac{55}{4}$
E) $x = \frac{217}{4}$

____ 7. Determine any point(s) of intersection between the following equations.

$y = 3 - x$

$y = \frac{6}{5} - \frac{9}{5}x$

A) $\left(-\frac{9}{14}, \frac{3}{2}\right)$

B) $\left(\frac{15}{4}, -\frac{3}{4}\right)$

C) $\left(\frac{3}{4}, \frac{9}{4}\right)$

D) $\left(\frac{3}{2}, \frac{21}{5}\right)$

E) $\left(-\frac{9}{4}, \frac{21}{4}\right)$

____ 8. Simplify $(-2+i)(5+9i)$ and write the answer in standard form.

A) $47 - i$

B) $47 - 13i$

C) $-19 + 43i$

D) $-23 - 13i$

E) $-19 - 13i$

____ 9. Simplify $\frac{3+i}{5+2i}$ and write the answer in standard form.

A) $-\frac{1}{29} - \frac{17}{29}i$

B) $\frac{17}{29} - \frac{1}{29}i$

C) $-\frac{1}{29} + \frac{17}{29}i$

D) $-\frac{17}{29} - \frac{1}{29}i$

E) $\frac{17}{29} + \frac{1}{29}i$

____ 10. Simplify $\left(\sqrt{-3}\right)^{11}$ and write the answer in standard form.

A) $-243\sqrt{3}$

B) $59,049\sqrt{3}i$

C) $-243\sqrt{3}i$

D) The expression cannot be simplified.

E) $243\sqrt{3}i$

____ 11. Solve $9+16x^2+24x=0$ by factoring.

A) $x=-\frac{3}{4},\frac{3}{4}$

B) $x=4,3$

C) $x=-3,-4$

D) $x=-\frac{4}{3},\frac{4}{3}$

E) $x=-\frac{3}{4}$

____ 12. Solve the following quadratic equation by factoring.

$$(p+a)^2-36b^2=0$$

A) $p=a,-36b$

B) $p=a-6b,a+6b$

C) $p=-a,36b$

D) $p=-a+6b,-a-6b$

E) $p=-a+6b,a+6b$

____ 13. Solve $0=16x^2+40x+15$ using the quadratic formula.

A) $x=\frac{\pm\sqrt{10}}{4}$

B) $x=\frac{5}{4}$

C) $x=\frac{-5\pm\sqrt{10}}{4}$

D) $x=\frac{-4\pm\sqrt{10}}{5}$

E) $x=\frac{5\pm\sqrt{10}}{4}$

____ 14. Solve the following equation using any convenient method.

$$(x+2)^2=-81$$

A) $x=-2\pm9i$

B) $x=-2,9$

C) $x=-81,9$

D) $x=-81,-2$

E) $x=-9\pm2i$

____ 15. Find all solutions of $\frac{1}{x^2}+\frac{10}{x}+16=0$.

A) $x=-2,-8$
B) $x=-2,8$
C) $x=-\frac{1}{2},-\frac{1}{8}$
D) $x=-\frac{1}{10},\frac{1}{6}$
E) $x=\frac{1}{10},-\frac{1}{6}$

____ 16. Find all solutions of the following equation algebraically.

$3\sqrt{x-4}-\sqrt{x-3}=0$

A) $x=-\frac{6}{7}$
B) $x=\frac{9}{7}$
C) $x=\frac{33}{8}$
D) $x=\frac{1}{8}$
E) $x=\frac{9}{2}$

____ 17. Find all solutions of the following equation algebraically.

$(x+3)^{2/3}=25$

A) $x=22$
B) $x=\sqrt[3]{25}-3$
C) $x=\frac{125}{9}$
D) $x=122$
E) $x=\sqrt[3]{25}-9$

____ 18. Find the *x*-intercepts of the graph of the equation $y=7x+\sqrt{10-489x}$

A) $(-10,0)$
B) $(11,0),\left(\frac{1}{50},0\right)$
C) $(11,0),\left(\frac{1}{48},0\right)$
D) $(10,0)$
E) $(-10,0),\left(\frac{1}{49},0\right)$

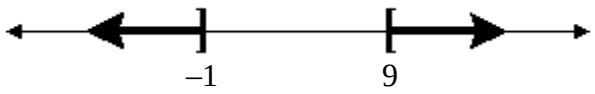
____ 19. Set $y = 0$ and solve the resulting equation.

$$y = 2\sqrt{x} - \frac{15}{\sqrt{x}} - 1$$

A) $y = -3, 9$
B) $y = 2$
C) $y = -3, 8$
D) $y = 8$
E) $y = 9$

____ 20. Solve: $3(x-4) > 3x - 9$
A) no solution
B) $x < -4$
C) $-3 < x < 4$
D) $x > 3$
E) $x \le -8$

____ 21. Use absolute value notation to define the interval shown below.



A) $5 - |x+4| \le 0$
B) $|x-4| - 5 \ge 0$
C) $|-4-x| \ge 5$
D) $|x+4| - 5 \ge 0$
E) $-1 \le x \le 9$

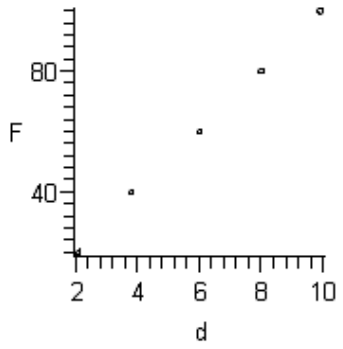
____ 22. Solve the inequality $36x - x^3 < 0$ and write the solution set in interval notation.
A) $(-6, 0) \cup (6, \infty)$
B) $(-6, 6)$
C) $(-\infty, \infty)$
D) $(-\infty, -6) \cup (0, 6)$
E) $(-\infty, 6)$

____ 23. Hooke's Law states that the force F required to compress or stretch a spring (within its elastic limits) is proportional to the distance d that the spring is compressed or stretched from its original length. That is, $F = kd$ where k is the measure of the stiffness of the spring and is called the *spring constant*. The table below shows the elongation d in centimeters of a spring when a force of F kilograms is applied.

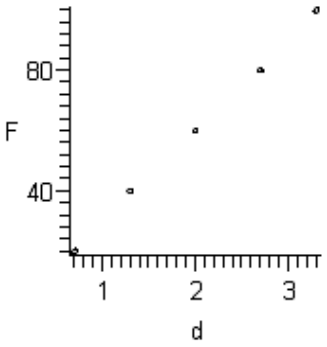
Force, *F*	**Elongation, *d***
20	3.5
40	6.3
60	10.0
80	13.3
100	16.5

Sketch a scatter plot of the data.

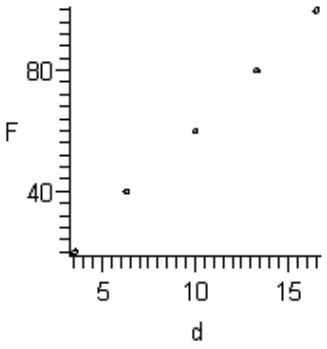
A)



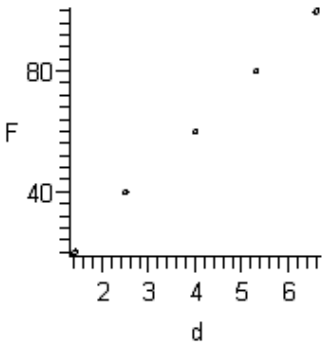
B)



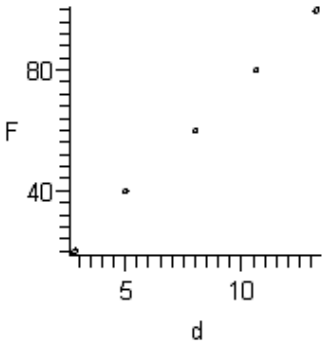
C)



D)



E)



____ 24. Hooke's Law states that the force F required to compress or stretch a spring (within its elastic limits) is proportional to the distance d that the spring is compressed or stretched from its original length. That is, $F = kd$ where k is the measure of the stiffness of the spring and is called the *spring constant*. The table below shows the elongation d in centimeters of a spring when a force of F kilograms is applied.

Force, F	Elongation, d
20	1.4
40	2.5
60	4.0
80	5.3
100	6.6

Find the equation of the line that seems to best fit the data. Use the model to estimate the elongation of the spring when a force of 70 kilograms is applied. Round your answer to one decimal place.

A) 2.3 centimeters
B) 4.6 centimeters
C) 6.9 centimeters
D) 9.2 centimeters
E) 3.5 centimeters

____ 25. The average lengths L of cellular phone calls in minutes from 1999 to 2004 are shown in the table below.

Year	Average length, L (in minutes)
1999	2.38
2000	2.56
2001	2.74
2002	2.73
2003	2.87
2004	3.05

Use the *regression* feature of a graphing utility to find a linear model for the data. Let t represent the year, with $t = 9$ corresponding to 1999. Use the model to predict the average lengths of cellular phone calls for the year 2012. Round your answer to two decimal places.

A) 5.00 minutes
B) 8.00 minutes
C) 4.00 minutes
D) 2.00 minutes
E) 3.00 minutes

Chapter 2
Answer Section

MULTIPLE CHOICE

1. ANS: C PTS: 1
2. ANS: B PTS: 1
3. ANS: B PTS: 1
4. ANS: A PTS: 1
5. ANS: E PTS: 1
6. ANS: A PTS: 1
7. ANS: E PTS: 1
8. ANS: E PTS: 1
9. ANS: B PTS: 1
10. ANS: C PTS: 1
11. ANS: E PTS: 1
12. ANS: D PTS: 1
13. ANS: C PTS: 1
14. ANS: A PTS: 1
15. ANS: C PTS: 1
16. ANS: C PTS: 1
17. ANS: D PTS: 1
18. ANS: A PTS: 1
19. ANS: E PTS: 1
20. ANS: A PTS: 1
21. ANS: B PTS: 1
22. ANS: A PTS: 1
23. ANS: C PTS: 1
24. ANS: B PTS: 1
25. ANS: C PTS: 1