**Extra Practice**

Practice 1 (Chapter 1)

1. Calculate the average of the list of numbers

1.18, 7.9, 9.31, 13.56, 23.05

2. Evaluate the expression

4 – 8.7 - 7.2

3. Find the multiplicative inverse of 2.5

4. Find the additive inverse of 

5. Evaluate the expression

- 17.6 + 15.1 – (- 6.7)

6. Evaluate the expression

- -  +

7. Evaluate the expression

- 2 + 

8. Evaluate the expression

0



9. Evaluate the expression

-3

( - 5)

10. Simplify the expression. Write the result using positive exponents.

x8 . x -3 . x –9

11. Simplify the expression. Write the result using positive exponents

a) x y - 4

x -3 y 2

b) 1.8 a -2 b6

* 1. b 4 a -3

12. Write 2.51 x 10 – 6  in standard form

13. Make a scatter plot of the relationship S

S = { ( -10, 9), (-6, 0), (5, - 3), (1, - 1) }

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14. Evaluate the expression.



15. Evaluate the expression

3 – 2. 32 x 3

* Practice 2

(Chapter 2)

1. Evaluate f(x) = – 6 + 9x2 for x= -3, 

1. Evaluate f (9) if f(x) = 4x2  - √x
2. Find the domain and range of S. Then state whether S defines a function
   1. { (0, 3), (-1, 4), (2,4), (1, -2), (4, -1) }
   2. { (1, 3), (-1, 4), (1, 2), (0, 1), (2, 1 ) }
3. Find the domain
   1. f(x) = - 
   2. f(x) = x2 + 4
   3. f(x) = - 2x – 7
4. Sketch the graph of y = f(x)
   1. f(x) = -3x + 1
   2. f(x) = - 2
5. Calculate the slope of the line passing through the given points
   1. (-4, -3), (6, -5)
   2. (-1, 7), (-2, 9)
6. Write the slope intercept form of a line passing through (2, 3) and (4, 0)
7. Write the slope intercept form of a line satisfying the given conditions
   1. x-intercept - 3, , y- intercept – 4
   2. Parallel to y = 5x – 3 passing through ()
   3. Perpendicular to y = , passing through (-2, 3)
   4. Passing through (-1, 1), (0, -2)
8. Determine the given point lies on the line

(2, -3) y = - 5(- x + 3) + 2

1. Find an equation of a vertical line passing through the point ()
2. Find an equation of a Horizontal line passing through the point (-3, -4)
3. Let f be a linear function. Find x and y intercepts of the graph of f

x -2 -1 0 1 2

y 0 3 6 9 12

1. Find y –intercept of the linear equation y = 3x – 7
2. Find x – intercept of the linear equation y = -x + 1
   * + Practice 3 (Chapter 3 )
3. Solve 6 – 7x = - 8 + 5x symbolically
4. Solve 3(2x – 3) + 2 = x + 8 symbolically
5. Solve 4 - 1 x < x + 1 symbolically

2

1. Translate the sentence into an equation and then solve the equation for x
   1. If 3 is added to 7 times of x, it equals x plus 6
   2. The difference between 2 times x and 5 is 10
2. Solve the equation
   1. - 2(4x + 1) = - x + 5
   2. (5 – y ) + 3y – 7 = 4( y – 1) – ( 5y – 3 )
   3. 1 – 3z + 5 = 2 z – ( 2 + z)

2 3

1. Solve graphically
   1. 2 +  x = - x + 6

3

* 1. 6 – 3x < x + 2
  2. – 2x + 3 > x - 3

1. Solve the equation for the given variable
   1. 3m – n = -5n + 1 ; n = - 1

3

b) C = 2πr ; r = 4

1. Solve the equation for y. Let y = f(x) and write a formula for f(x)
   * + 3(x - 5y) = 6y – 9
2. Solve the compound inequality. Graph the solution set on a number line.

a ) 2x – 1 < 7 and - 2x < 6

b ) 3x – 1 < 2 or x – 1 > 10

c ) x + 1 < 2 and x – 1 > - 3

1. Write the inequality in interval notation
   1. x < 5

2

* 1. x < 3 or x > 9
  2. – 10 < x < - 7
  3. x > - 2 and x > 5

1. Solve the three part inequality
   1. 5 > 5x – 10 > 30

b) - 6 < 3 – 5x - 1 < 9

3

* 1. 1 < 2(x – 1) < 2
  2. 1 < x +  1 < 3

2

12. Solve 4 \_\_ x = 1 and check your answer

3

* Practice 4 (Chapter 4)

1. Decide which of the following is a solution to the system of equations,

(-2, 1) or ( 3, 4)

3x - 2y = 1

2x - 3y = - 6

1. Determine graphically if the system is dependent, inconsistent, or has a unique

Solution. Solve the system if unique solution exists

2x – y = 7

x + y = 1

1. Solve the system of equations by substitution or elimination

5x + y = - 5

-5x – 4y = - 1

1. Solve the system of equations

a) x – y = 3

x + y = -2

b) 4x + y = 7

2x – 3y = 1

c) 1.1x + 2.1y = 1.3

3.3x + 1.5y = 5.9

d) x + 2y= 2

2x + 4y = 4

e) x + 2y = 1

x - 2y = 5

f) 1 x + 3 y = 10

2 4

1 x -  1 y = - 2

2 4

g) 1 x - 1 y = 6

9 3

1 x + 1 y = 12

3

* Practice 5 (Chapter 5)

1. Simplify the expression by combining like terms.

* 1. 3xy2 – 5x2 + 6x2 – 5xy2 – xy2
  2. -2x3 - 5y3+ 7x3 – y3 + 9x3
  3. ( - 2z3 + 4z2 + z – 1) – (- 2z3 + 11z – 7)

1. Multiply the expression
   1. (x – 3) (x – 6)
   2. y – 4 ( y – 5)

c) ( x – 5)2

d)( 3x – 2y 2) 2

e)(( a+b) + 1) (( a+ b) – 1)

1. Factor completely
   1. 3x4 – 3x2
   2. 25x2 – 20x + 4
   3. x3 + 2x2 + 4x + 8
   4. 343x3 – 64
   5. 125 + 8x3
   6. y2 – 16
   7. 5x3 – 50x2+ 125x
   8. a6 – 8b3
   9. 9a2 + 24ab + 16b2
2. Use factoring to solve the polynomial equation

a ) 4x2 – 16x = 0

* 1. 2x2 – 5x = -2
  2. 2x2 – 3x + 2 = 0
  3. 3x (x- 1) – 2(x – 1)= 0
  4. x3 – x = 0
  5. x3 + 5x2 – 6x = 0
  6. 2x4 – 10x 2+ 8 = 0
  7. x2 = 625
  8. x2 + 9 = 0
* Practice 6 (Chapter 6)

1. Solve the rational equation

a) 2 = - 1

x - 4

b) 1 = 5

2 – 3x

c) x =  3x – 3

x – 1 x – 1

1. Simplify the expression
   1. 2y2 + 5y – 3

2y2 – 3y + 1

* 1. x2 – 25 . x – 5

x2 + 25 x + 5

c) 3 - 6

x2 – y2  x + y

d) 2  -  3

(x – 2)2  x – 2

e) 4 +  4 r

r – 1 1 - r

1. Simplify the complex fraction

a) 2 - 1

x 3

1 + 3

3 x

b) 1 - 5

x x + 4

1 + 3

x x + 4

c) 4

m2 – n2

12

m – n

d) 4 -  6

x + 5 x – 5

4 - 2

x + 5 x2 – 25

* Practice 7 (Chapter 7 )

1. Simplify the expression

b) ( - 32x) – 5 \*

d) x2 3/2 \*

y4

1. 
2. 2√ 18 - 6√2 - 11√2
3. Write the complex expression in standard form
   1. (5 + 3i) – ( 4i – 3)
   2. 5i(6 – i)2
   3. (2 – 3i)(2 + 3i)
   4. 1 + i

4 + 7i

* Practice 8 (Chapter 8 )

1. Identify the vertex of parabola
   1. f(x)= 2x2 + 3
   2. f(x) = - (x + 3)2 – 2
2. Solve the equation by factoring
   1. x2 - 5x + 6= 0
   2. x(3x- 1) – 4 = 0
3. Solve the quadratic equation by using quadratic formula
   1. 5x2 + 2x – 1 = 0
   2. – 3x(x + 2) = 2
4. Solve the equation. Write complex solution in standard form
   1. 2x2 –x + 1 = 0