MTH070 Review Problems for Test 1 - MLC

This is not a sample test. These problems are designed to get you started on your review for the test. Study the homework from the textbook and your class notes for a more complete review. Work these problems on a separate sheet of paper.

Section 1.1
1. Use properties of equality to solve each of the equations. Show your steps.
   a) $5y = 75$ 
   b) $\frac{t}{3} = 16$ 
   c) $x - 7 = 26$ 
   d) $\frac{-16x}{21} = -4$

2. Translate each sentence into an equation, using $x$ for the unknown quantity. Solve the equation.
   a) Twelve is the result of a number added to seventeen.
   b) The difference of a number and negative three is sixteen.

Section 1.2
3. Use properties of equality to solve each of the equations. Show your steps.
   a) $3x + 4 = 40$ 
   b) $7a + 2 = -26$ 
   c) $\frac{t}{15} + 20 = 12$
   d) $3(x - 6) + 5 = -25$ 
   e) $\frac{2}{5}x + \frac{7}{10} = -\frac{1}{2}$

Section 1.3
4. Solve each equation for the given variable.
   a) $p + 3t - 7 = 0$ for $p$ 
   b) $x - 3t + 5k + 1 = 2t - 7k + 8$ for $x$
   c) $x = \frac{2y - z}{5}$ for $y$ 
   d) $-13 = \frac{x - kt}{3}$ for $t$

Section 1.4
5. Solve each of the inequalities, then graph the solution on a number line.
   a) $x - 5 \leq 8$ 
   b) $-3x + 7 > -5$ 
   c) $2 - 4t < -3 + t$
   d) $4(y + 1) \leq -12$ 
   e) $17 \leq 5x + 2 \leq 32$

Section 2.1
6. A grocery store sells kiwis for $1.69 per pound. Let $c$ represent the cost for $p$ pounds of kiwis. Use the table to help answer the following questions.

<table>
<thead>
<tr>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>8.45</td>
</tr>
<tr>
<td>10</td>
<td>16.90</td>
</tr>
<tr>
<td>15</td>
<td>25.35</td>
</tr>
<tr>
<td>20</td>
<td>33.80</td>
</tr>
<tr>
<td>25</td>
<td>42.25</td>
</tr>
</tbody>
</table>

   a) What is the cost for 25 pounds of kiwis?
   b) How many pounds of kiwis can be purchased for $25.35? 

7. An airplane takes off from an airport. Let $h$ represent the height of the plane in feet and $t$ represent the time, in seconds, after the plane leaves the ground. $h = 16t + 32$

   a) What is the height of the plane after 12 seconds?
   b) How many seconds does it take the plane to reach a height of 572 feet?
8. The graph shows the distance, \( d \), in miles, Phil rode his bike during a cross-country bicycle trip. Let \( t \) represent the number of days Phil rode.
   a) What was Phil’s distance after 2 days?
   b) How many days did it take Phil to go 650 miles?

Section 2.2
9. Plot each of the ordered pairs on a graph. Label each point with its letter.
   a) (2, 5)  b) (-4, -2)  c) (3, -2)  d) (-2, 3)

10. In which quadrant is each point located?
    a) (225, -505)  b) (-400, -2)  c) (-30, 27)  d) (32, 39)

11. a) Create a scatterplot from the given table of data:

12. Determine whether or not each ordered pair represents a solution of the equation.
   \[ 5x + 2y = 7 \]
   a) \((-1, 6)\)  b) \((2, -2)\)  c) \((5, -9)\)

13. Find three solutions for the equation. Graph the equation on a coordinate plane.
   \[ y = -3x + 5 \]

Section 2.3
14. Determine the slope of each linear graph.

15. Find the slope of the line passing through each pair of points.
    a) \((-2, 1), (0, .5)\)  b) \((6, 15), (6, 3)\)  c) \((2, 2), (5, 5)\)  d) \((3, 8), (5, 8)\)

16. Find the slope of each line whose equation is given.
    a) \(10y + 12x = 1\)  b) \(3x + 5y = 6\)  c) \(2y = 16\)  d) \(3x + 2 = -7\)

Section 2.4
17. Graph each of the equations by hand.
   a) \(y = \frac{1}{2}x - 2\)  b) \(y = -2x + 3\)  c) \(6x + 8y = 32\)