

## IM1 Problem Set 22

Task 1	Task 2	DC
Put solutions to problems from the previous Problem Set on the board	Discuss all problems and come to a consensus. Record solutions in your notebooks and present solutions.	DC

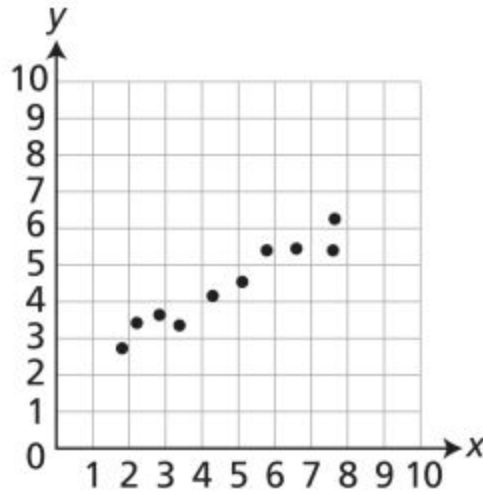
### Problem Set 22

<b>22.1</b>	<p>Evaluate the following expressions, being mindful of the order of operations.</p> <p>a. (i) <math>(2^2 + (-9)) \div ((-10) - (-5)) \times (-2)</math>      (ii) <math>(-3)^2 \div 3 \times (5 - 10 + (-8))</math></p> <p>b. (i) <math>(\frac{3}{4} + \frac{7}{8} \times \frac{4}{5} - \frac{1}{4}) \div \frac{7}{9}</math>      (ii) <math>\frac{1}{6} \div (\frac{3}{4} + \frac{2}{9} - \frac{8}{9} \times \frac{7}{8})</math></p>
<b>22.2</b>	<p>Simplify the following expressions, using the appropriate rules for exponents:</p> <p>a. <math>(3x^3)(3x^4)(-3x^2)^2</math>      b. <math>(4x^3y^3)^3</math>      c. <math>\frac{-48c^2d^4}{-8cd}</math>      d. <math>(\frac{9m^2n^7}{6m})^3</math></p>
<b>22.3</b>	<p>We have the following set of numbers: <math>X = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11\}</math>. Let Set A be the set of odd numbers from the original set and let set B be the set of prime numbers from Set X.</p> <p>a. Draw a Venn diagram for this information.</p> <p>b. One number is chosen at random.</p> <ol style="list-style-type: none"> <li>i. How probable is it that the number is odd?</li> <li>ii. How probable is it that the number is even?</li> <li>iii. How probable is it that the number is prime and odd?</li> </ol>
<b>22.4</b>	<p>Two lines are given to you. Line 1 has the equation of <math>3x + 5y - 19 = 0</math>. Line 2 goes through <math>(4, -3)</math> and is perpendicular to the line <math>2x + y - 9 = 0</math>. Use your calculator to determine where Line 1 and Line 2 intersect.</p>
<b>22.5</b>	<p>When not busy doing Math problem sets, Aisha babysits to earn a few extra dollars. The Harris family pays her \$10 plus \$5.50 for every hour she works, while the Duggan family pays her \$6.50 for every hour she works.</p> <ol style="list-style-type: none"> <li>a. Write an equation that models Aisha's earnings when working for the Harris family.</li> <li>b. Write an equation that models Aisha's earnings when babysitting for the Duggan family.</li> <li>c. Graph both equations on your calculator.</li> <li>d. For which family should she babysit and why?</li> </ol>

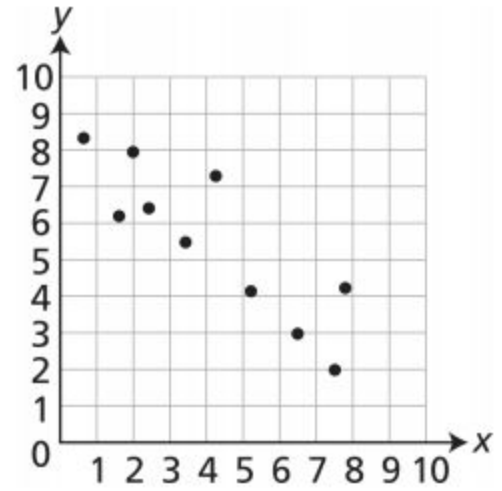


22.7

For the following scatter-plots, draw the line of best fit and determine its equation.



a.



b.

22.8

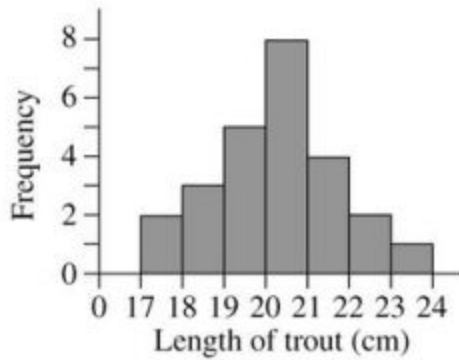
Find the mean and median of these data sets

a. (i) 7,13,18,24,3,9,18

(ii) 24,15,18,20,18,22,24,26,18,26,24

b. (i) See Histogram

(ii) see frequency table



Number of Pets	Number of Students
0	2
1	7
2	3
3	1
4	2