4th Grade CRCT Study Guide

Numbers and Operations 43%

Place Value Whole numbers

millions		Hundred thousands	Ten thousands	thousands		hundreds	tens	ones
7	**,**	**5**	**2**	**3**	**,**	**8**	**2**	**5**

Seven million, five hundred twenty three thousand, eight hundred twenty five
7,000,000 + 500,000 + 20,000 + 3,000 + 800 + 20 +5
(7×1,000,000) + (5×100,000) + (2×10,000) + (3×1,000) + (8×100) + (2×10) + (5×1)

Place Value for decimal numbers

Tens	Ones	decimal	Tenths	hundredths
7	**5**	**.**	**6**	**8**

Seventy five and sixty eight hundredths
70 + 5 + 0.6 + 0.08
(7×10) + (5×1) + (6×0.1) + (8×0.01)

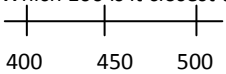
Rounding

3,461

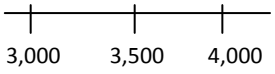
Nearest 10	Nearest 100	Nearest 1,000
3,460	3,500	3,000

- Which 10 is it closest to? 3,46<u>1</u>

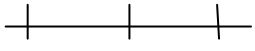
- Which 100 is it closest to? 3,<u>461</u>



- Which 1,000 is it closer to? <u>3,461</u>



Round to the nearest tenth: 2.64

- Which tenth is it closer to?
- 

Answer: 2.6

Why round? Rounding is done when you need an approximate number instead of an exact amount.

Estimate the sum or difference

435+268=

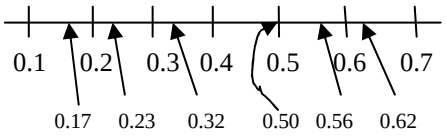
435 is about 400 and 268 is about 300, so the answer is about 100

618-385=

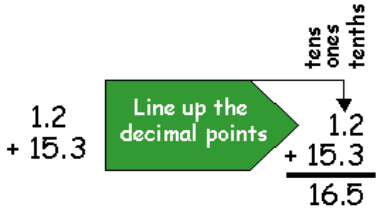
618 is about 600 and 385 is about 400, so the answer is about 200

Putting decimals in order

Think Money: Place the following in order from greatest to least/least to greatest.
$0.56, $0.62, $0.17, $0.23, $0.32, $0.50
Using a number line



Adding and Subtracting Decimals



Think: I need to add dollar parts to dollar parts and change parts to change parts.

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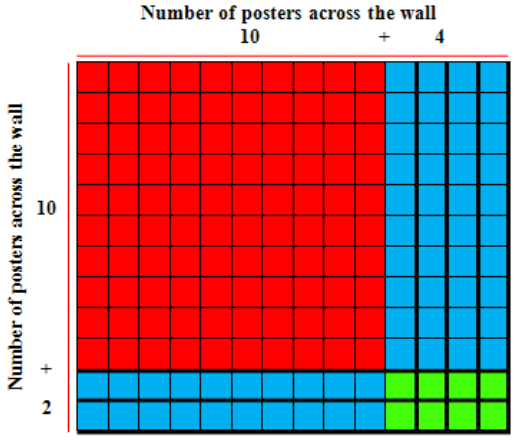
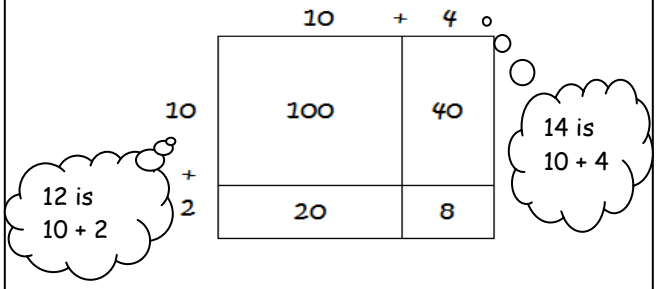
Multiplication of Whole Numbers (2 digit by 2 digit area model)

I am placing posters on my wall in my room. I can fit 14 posters across and 12 posters down my wall. How many posters can I put on my wall?





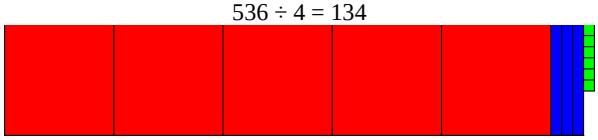
100 + 20+ 40+ 8 = 168

	60	7
80	4800	560
3	180	21

```
  67
× 83
4800
 560
 180
+ 21
5561
```

Division of Whole Numbers Fair Share Model

536 ÷ 4 = 134



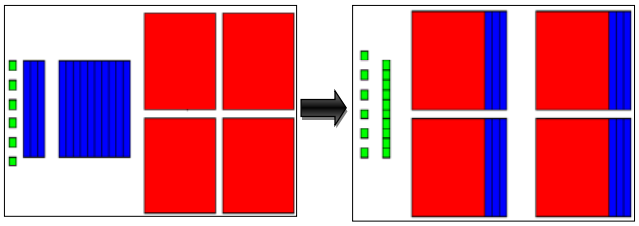


Figure 1 Figure 2

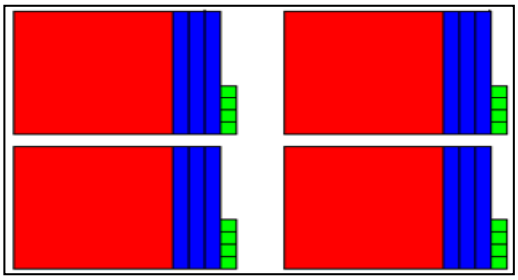
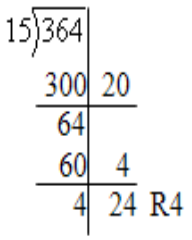
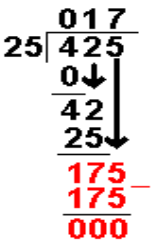


Figure 3

Division





Dividend – the number being divided (364, 425)

Divisor –the number of equal groups, or the size of each group (15, 25)

Quotient – the result of a division problem (24 R4, 17)

Example: dividend ÷ divisor = quotient

Remainder – the part of the dividend that is left after all possible equal sized groups are created.

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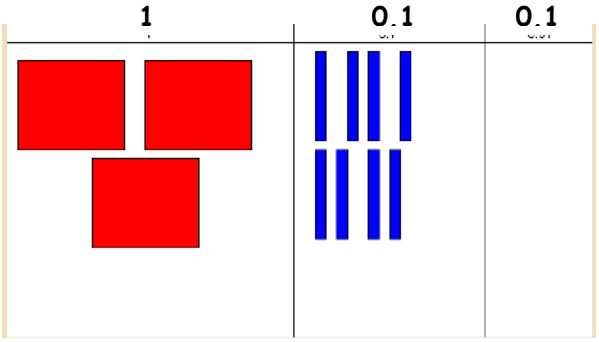
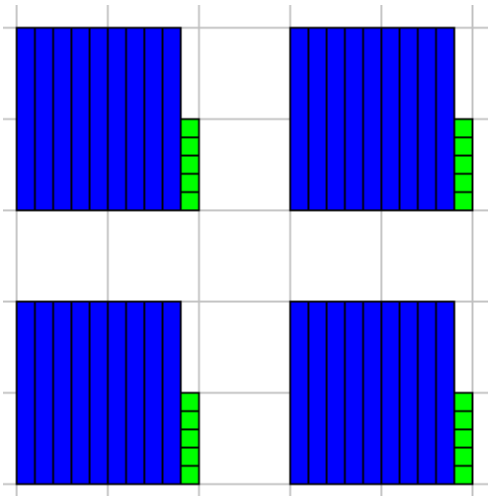
Dividing Decimals Model

At the apple stand, there were 3.8 liters of cider. If four customers shared the cider equally, how much did each customer buy?

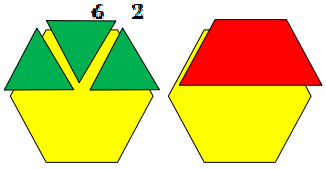


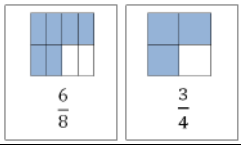


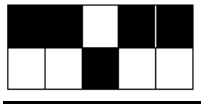
Each customer will get 0.95 liters.

Equivalent Fractions

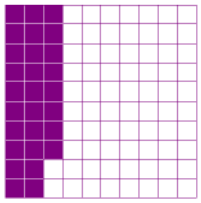
$\frac{3}{6} = \frac{1}{2}$





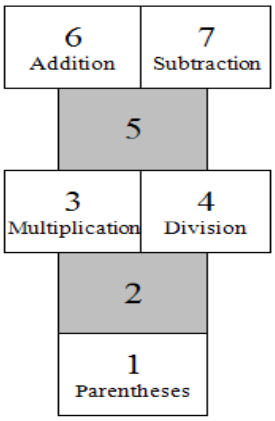


$\frac{5}{10} = 0.5$

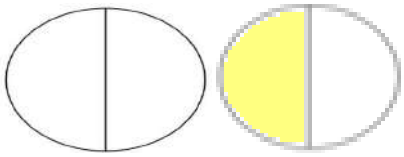


$\frac{28}{100} = 0.28$

Order of Operations



Improper Fractions and Mixed Numbers



$$3\frac{1}{2} = 1\frac{2}{2} + 1\frac{2}{2} + 1\frac{2}{2} + \frac{1}{2} = \frac{7}{2}$$

4th Grade CRCT Study Guide

Properties of Addition and Multiplication Properties of Zero

Addition Property of Zero

- When zero is added to any number, the resulting sum is that number.
- 5 + 0 = 5 0 + 2 = 2

Multiplication Property of Zero

- When zero is multiplied by any number, the resulting product is zero.
- 5 x 0 = 0 0 x 2 = 0

Associative Properties

Associative Property of Addition

- When adding 3 or more numbers, changing the grouping does not change the sum.
- (3 + 4) + 5 3 + (4 + 5)
  7 + 5 = 12 3 + 9 = 12

Associative Property of Multiplication

- When multiplying any 3 numbers, changing the grouping does not change the product.
- (3 x 4)5 3(4 x 5)
  12 x 5 = 60 3 x 20 = 60

Commutative Properties

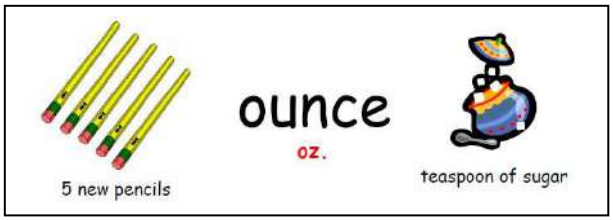
Commutative Property of Addition

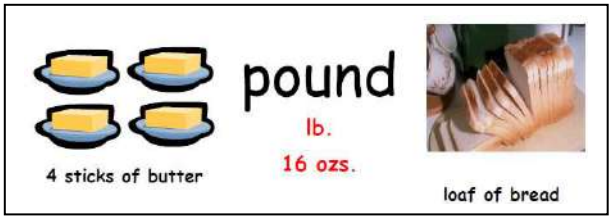
- When adding any 2 or more numbers, changing the order does not change the sum.
- 3 + 4 = 4 + 3
  7 = 7

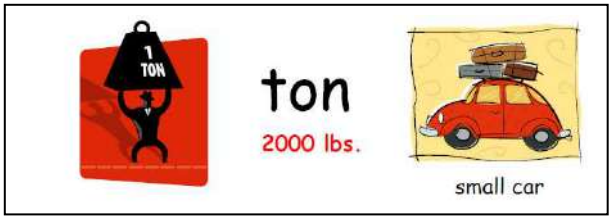
Commutative Property of Multiplication

- When multiplying any 2 or more numbers, changing the order does not change the product.
- 3 · 4 = 4 · 3
  12 = 12

Measurement 17%







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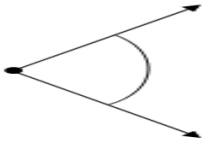
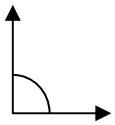
Angles

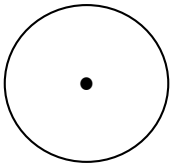
Obtuse angle:
Greater than 90^0 and less than



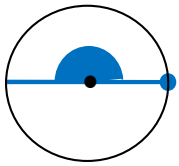
Acute Angle:
Less than 90^0



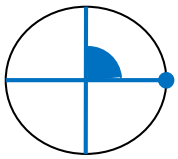
Right Angle: 90^0



A full rotation of 360° is
1 whole circle



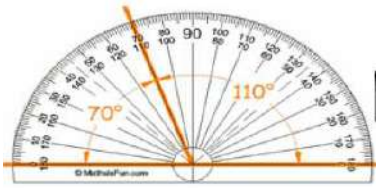
180 ° is a half rotation and
½ of the circle, also called a
straight angle.



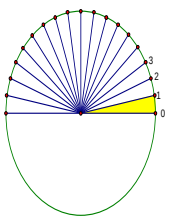
90 degrees is ¼ of the circle

Measuring Angles

Protractor



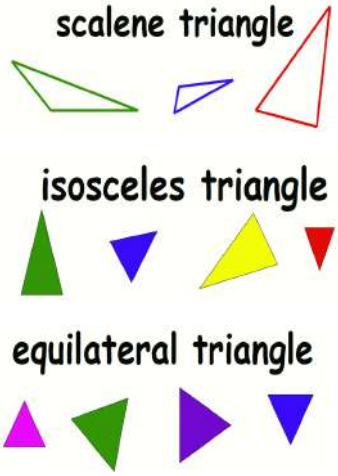
Wedges



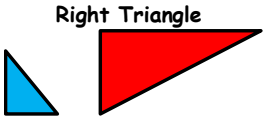
Angle Ruler

Geometry 20%

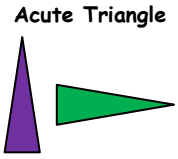
Triangles Classified By Sides



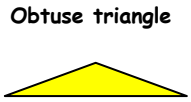
Triangles Classified By Angles



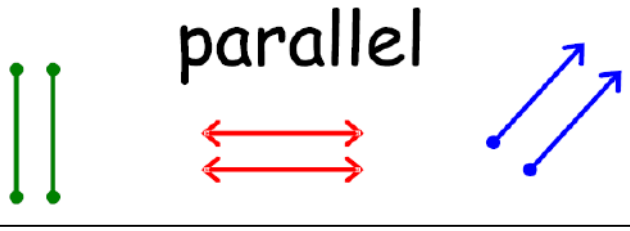
Has a right angle

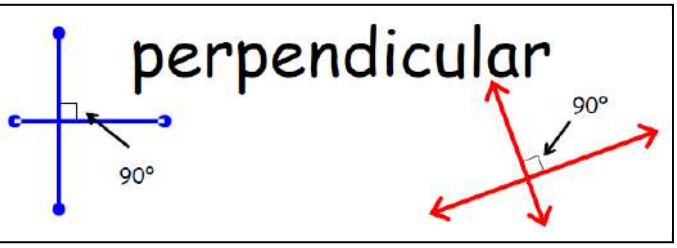


All angles are
smaller than a
right angle



One angle is
larger than a
right angle





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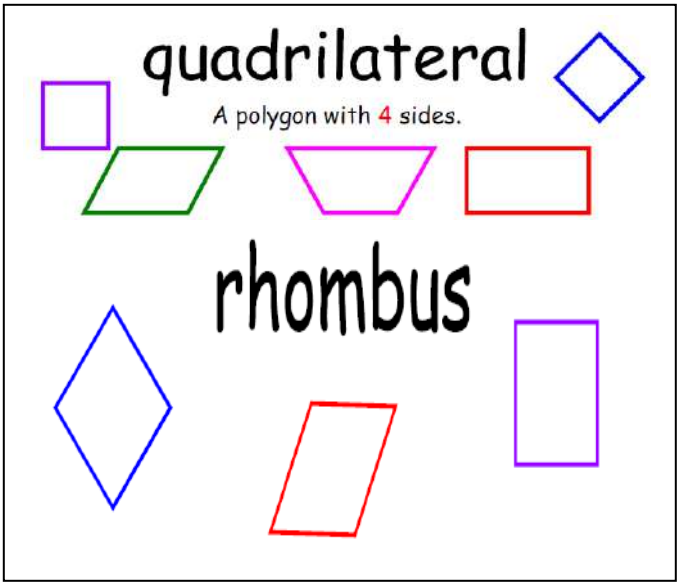
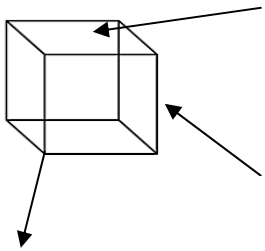


Cube



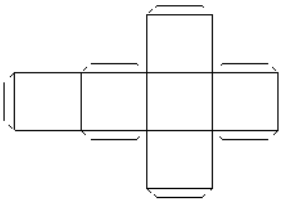
Face: a cube has 6 faces. Each is the shape of a square.

Edge: a cube has 12 edges

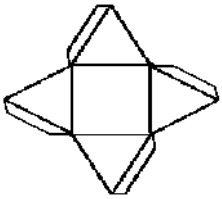
Vertex: A cube has 8 vertices

3-D Nets

Cube

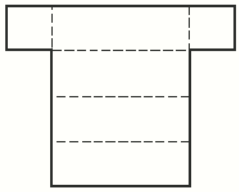


Pyramid

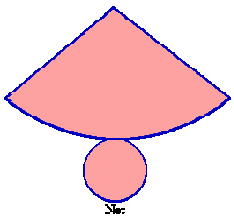


Triangular Prism

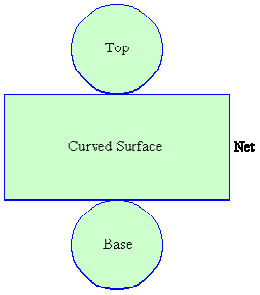
Rectangular Prism



Cone



Cylinder



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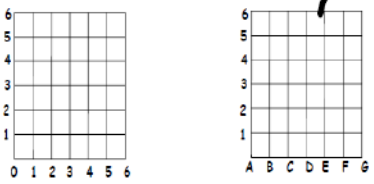
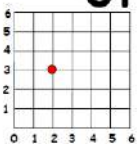
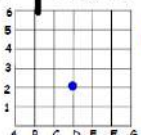
coordinate system



ordered pair

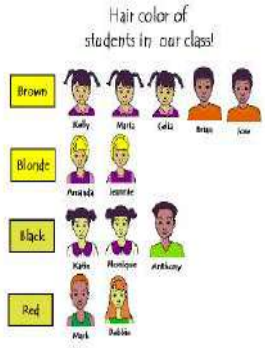


(2, 3)

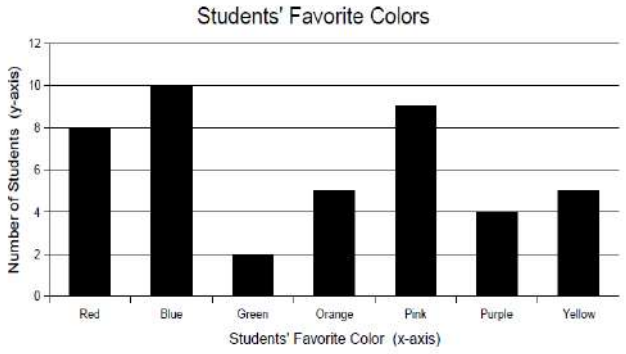


(D, 2)

pictograph

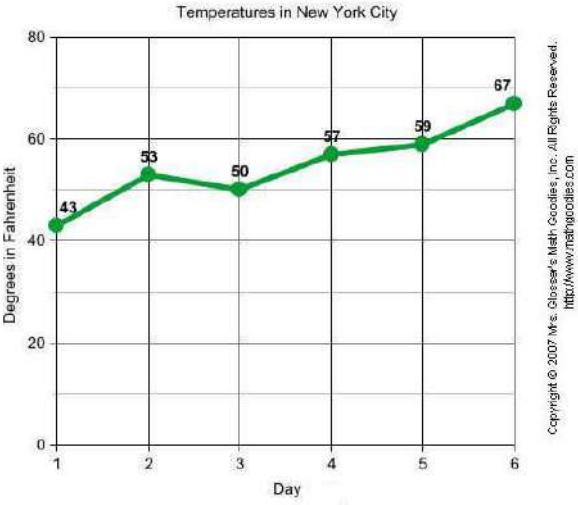


Bar Graph

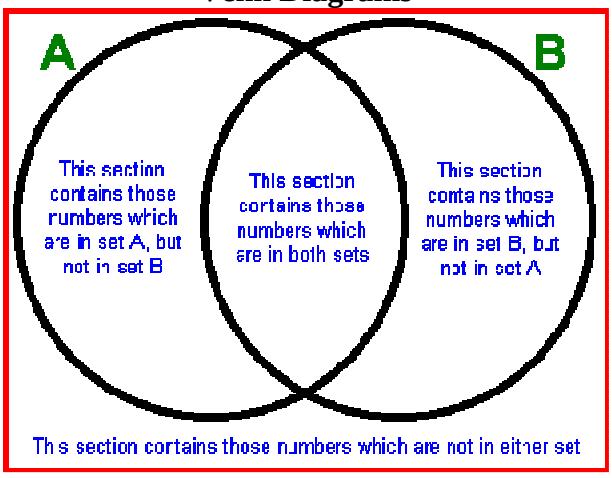


Data 10%

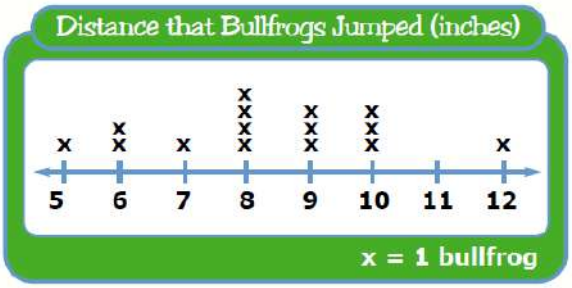
Line Graph



Venn Diagrams



Line Plot Graph



Range, Median, and Mode

Data Set:

13, 13, 13, 13, 14, 14, 16, 18, 21

Range: The difference between the highest value and the lowest value

Range 21 -13 = 8

Median: The middle value.

13, 13, 13, 13, 14, 14, 16, 18, 21

Median = 14

Mode: The number that is repeated the most. ***If each number is represented only one time, then there is no mode.***

13, 13, 13, 13, 14, 14, 16, 18, 21

Mode = 13

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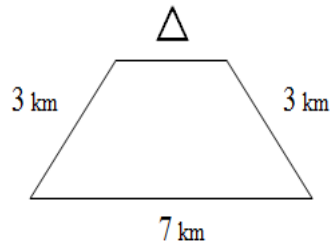
Finding Unknowns



If the perimeter is 15, what is the value of Δ?

3km + 7km + 3km + Δ = 15
Δ = 2km

Patterns in numbers

My Rule	
Rule: ☐ + 18	
Input	**Output**
5	23
?	32
15	?

What's My Rule?	
Rule:	
Input	**Output**
25	5
30	6
5	1

Rule is ☐ ÷ **5**

Writing and Evaluating Mathematical Equations

Students at Pine Elementary School typically earn 6 points for their explanation and 10 points for making a connection when completing their Exemplars. Which class scored the most points?

In the chart below:

☐ represents the number of students who earned points for their explanations.

Δ represents the number of students who earned points for making connections.

Classroom	Number of students writing explanations	Number of students making connections	Expression	Substitution
Smith	3	2	6x☐+ 10xΔ	6x3+10x2
Jones	5	1		

4th Grade CRCT Study Guide

http://www.helpingwithmath.com/by_subject/decimals/dec_adding_subtracting.htm

http://www.ucc.edu/nr/rdonlyres/777c004d-0f6f-46ad-8a4f
c1ab2d634e15/0/propertiesofadditionandmultiplication.pdf

http://etc.usf.edu/clipart/sitemap/shapes.php

http://gwydir.demon.co.uk/jo/solid/cube.htm

http://www.eduplace.com/parents/hmcam/reviews/pdf/4/4hmmca-cr-28-02-rt.pdf

http://www.mathsteacher.com.au/year8/ch10_geomcons/09_cones/cylinder.htm

http://www.mathgoodies.com/lessons/graphs/line.html

http://www.forsyth.k12.ga.us/13092062917545278O/lib/13092062917545278O/4_Reading_Line_Plots.pdf

http://www.superteacherworksheets.com/graphing.html

http://www.cimt.plymouth.ac.uk/projects/mepres/book7/bk7i1/bk7_1i3.htm