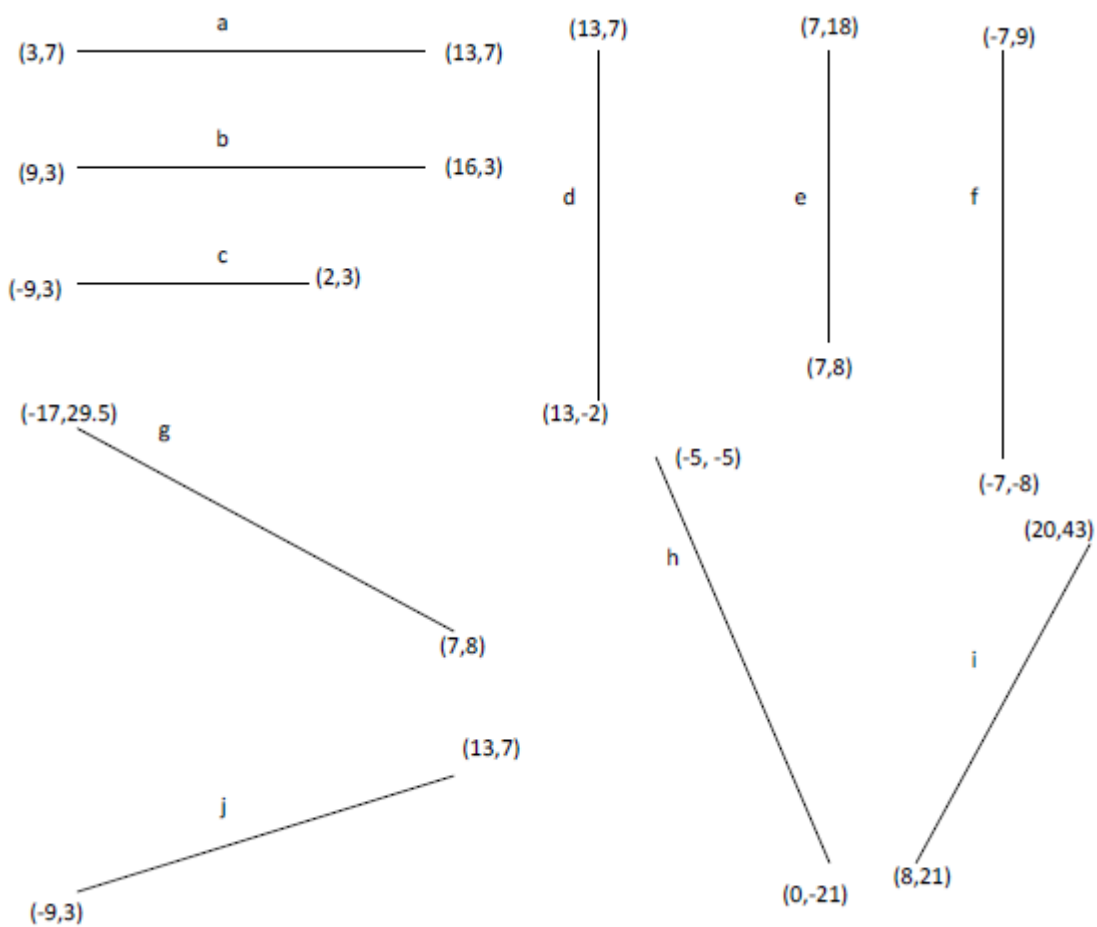


This homework should be used as part of your revision schedule, hence it is slightly longer than normal.

Q1 A line has a gradient of 4 and runs through the point, (-7,4). Find the equation of the line.

Q2. An equation runs through the points (9, -11) and (-3, -7). What is the equation of the line?

Q3. Find the midpoint of each line.



Q4. Solve these equations:

a $5(d + 8) = 80$

b $9(2f + 3) - 3(6f - 8) = 51$

c $\frac{4d+7}{3d-2} = 40$

d $6x^2 + 12 = 66$

e $5w + 16 = 7w - 12$

f $3t + 7 = \frac{4t+12}{4}$

Q5. a) On a map, the scale is 1:2500. Jim plans a walk that is 42cm long on the map. How long is it on the ground?

b) Shahid has another map that has a scale of 4cm to 1km. How many cm on Shahid's map would the same walk be?

Q6. Look at the following numbers.

23 29 35 41 47 53 59

a) Find the closed form (nth term) of the sequence.

b) What is the 437th number in this sequence?

c) Is the number 12,427 in this sequence?

Q7. Simplify the following:

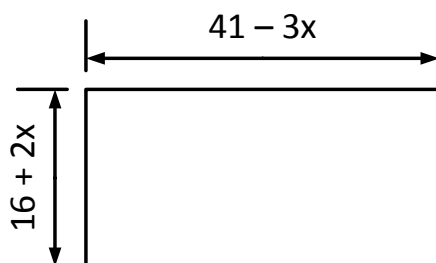
a $4x \times 7x$

b $\frac{7^{17}}{7^5} =$

c $3\left(\frac{5}{9}x - 6\right)$

d $27^{\frac{2}{3}} + 16^{\frac{1}{2}} =$

Q8. The perimeter of the following rectangle is 90cm. What is its area?



Q9 Find the lowest common multiple and the highest common factor of the following numbers:

a 27 and 117

b 34 and 85

Q10 Order the following numbers beginning with the smallest:

$$\frac{5}{6}, \quad 0.89, \quad \frac{\sqrt{16}}{5}, \quad 0.0962, \quad 3, \quad 5 \times 10^{-4}, \quad 0.00242, \quad \frac{4}{10000}, \quad \frac{\pi}{2}$$

Q11 Below is a list of numbers showing the number of goals scored against Manchester City in a perfect season.

2	5	3	2	2	2	4	0	0	0	0	3
3	3	2	1	1	0	1	0	1	1	2	0
2	2	3	9	1	2	2	1	4	3	3	1
1	2	3	2	1	1	2	3	3	3	2	1

- Find the mean, median and mode of this data.
- Find the range of the data.
- What type of data is this data and how do you know?
- What type of data display would be suitable to show the data?

Q12. Billy made himself a kite. He painted a black circle with a radius of 16 cm onto his kite. The rest, he painted white. What is the area of the part of the kite that he has painted white?

