Q1. Solve $x^2 - x - 42 = 0$

Q2. Expand and simplify:
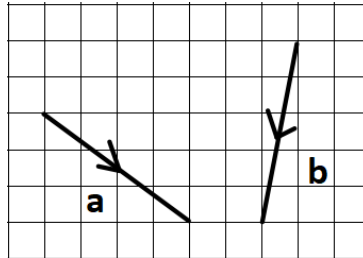   a. $(x - 5)^2$ b. $(x + 3)(x - 2) + 3(x + 1)$ c. $3(x - 2) - (x + 1)(x + 1)$

Q3. A straight line has the equation $2x - 3y = 5$:
    a. Find its gradient
    b. State the co-ordinates of point where it crosses the y axis.

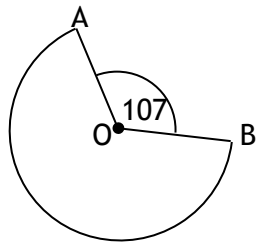Q4. Find the components of the vector **a** + **b**:

Q5. A brand new Renault Clio is bought for £10,795.
   It depreciates in value at a rate of 14.2% p.a. for three years.
   What is the new value of the car?

Q6. Find the area of sector AOB shown below, which has a radius of 7.9cm.

Q7. Simplify each of the following.

    a. $p^5 \times p^{-2}$ b. $\dfrac{6m^3 \times 3m^5}{9m^6}$

Q8. Eric needs to save £200,000 cash for a deposit on a hotel.
   He invests £130,000 in a high interest bond which yields an interest rate of 11% per annum.
   After how many years will he have enough to pay the deposit on the hotel?

Q9. The number of earthquakes per year in Los Angeles is recorded over a 12 year period. The results are shown below.

<div align="center">16 19 12 20 22 15 16 17 18 29 26 21</div>

    a. Find the median number of earthquakes
    b. Find
        i. The lower quartile
        ii. The semi-interquartile range.

   The number of earthquakes in Reykjavik over the same 12 year period was recorded. The median was 26 and the semi-interquartile range was 8.
    c. Make two statements comparing earthquake activity in the two cities.