a) In which quadrant of the graph pictured above would the point (3,-4) appear?

b) If you are graphing data points and the x-axis values are negative and the y-axis values are negative, which of the following four graphs would you use?
Scientific Notation
Write the following numbers without scientific notation:
c) \( 4.15 \times 10^2 \)
d) \( 1.267 \times 10^{-3} \)

Write the following numbers in scientific notation:
e) \( 1,245 \)
f) \( 0.00416 \)

Conversion of Units
Convert the following to metres:
g) \( 12 \text{cm} \)
h) \( 345 \text{mm} \)

Convert the following to millimetres:
i) \( 3.1 \text{m} \)
j) \( 0.55 \text{m} \)

Rearranging Formulae
Rearrange the following formulae to make “a” the subject:

k)
\[
d = \frac{a + c}{b}
\]

l)
\[
b = d(a^2 + c)
\]

m)
\[
\frac{-b}{a} = \frac{c}{-d}
\]
Fractions
Write the reciprocals of the following numbers:

n) \( \frac{5}{1} \)
o) \( \frac{5}{6} \)

Calculate the answers to the sums below:
p) \[
\frac{2}{5} + \frac{1}{3}
\]

q) \[
\frac{2}{5} - \frac{3}{6}
\]

Proportionality
r) If £6 buys €7.54, how many Euros will £7 buy?

s) If the size of a letter on an eye test chart is in proportion to the distance the chart is viewed from. The top letter in a chart viewed at 6m is 87.2mm. What size would the top letter be in a chart viewed from 4m?

Degrees and Minutes
Write the following in degrees:
t) \( 4°25' \)
u) \( 6°32' \)

Write the following in degrees and minutes:
v) \( 4.75° \)
w) \( 6.2° \)
Logs
Get the log of the following numbers:
  x)  5
  y)  50

Get the antilog of the following numbers:
  z)  8
  A)  0.25

Trigonometry
Find the length of the third side of the triangle marked “x”.

B)

C)
D) Calculate the angle “A”.

E) Calculate the angle “A”.

**Arithmetic & Geometric Progressions**

What term comes next in the series:

F) 14, 17, 20

G) 2, 6, 18
Quadratic Equations
Using the formula
\[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \]

Solve the following quadratic equations:
H) \( x^2 - 6x + 3 = 0 \)
I) \( 2x^2 + 5x + 1 = 0 \)

Simultaneous Equations
Calculate \( x \) and \( y \) using the following equations:
J) \( 3x + 2y = 7 \)
\( x + 3y = 9 \)
K) \( 2x - y + 9 = 0 \)
\( 2x + 3y = 2 \)

Graphs
L) Find the slope of the line that contains the points (2,3) and (7,1)
M) Find the slope of the line that contains the points (-2,3) and (7,-1)

N) Find the \( y \)-axis intercept for a line with a slope of 3.5 if the point (5,2) lies on the line.
O) Find the \( y \)-axis intercept for a line with a slope of -3.5 if the point (5,2) lies on the line.
Degrees and Radians
P) Convert 10° to radians
Q) Convert 2 radians to degrees

Geometry of a Circle
R) Calculate the radius of a circle whose circumference is 14cm.
S) Calculate the circumference of a circle whose radius is 1.75cm.

Use of a Calculator
T) Calculate: \[\frac{-7.25}{1-[0.012(-7.25)]}\]

U) Calculate: \[\frac{1}{1-[0.013(-10)]} \times \frac{1}{1-[(0.007/1.5)(6.5)]}\]