Name: _____

GCSE (1 – 9)

Frequency Trees

Instructions

- Use **black** ink or ball-point pen.
- Answer all Questions.
- Answer the Questions in the spaces provided
  – *there may be more space than you need.*
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The marks for each Question are shown in brackets
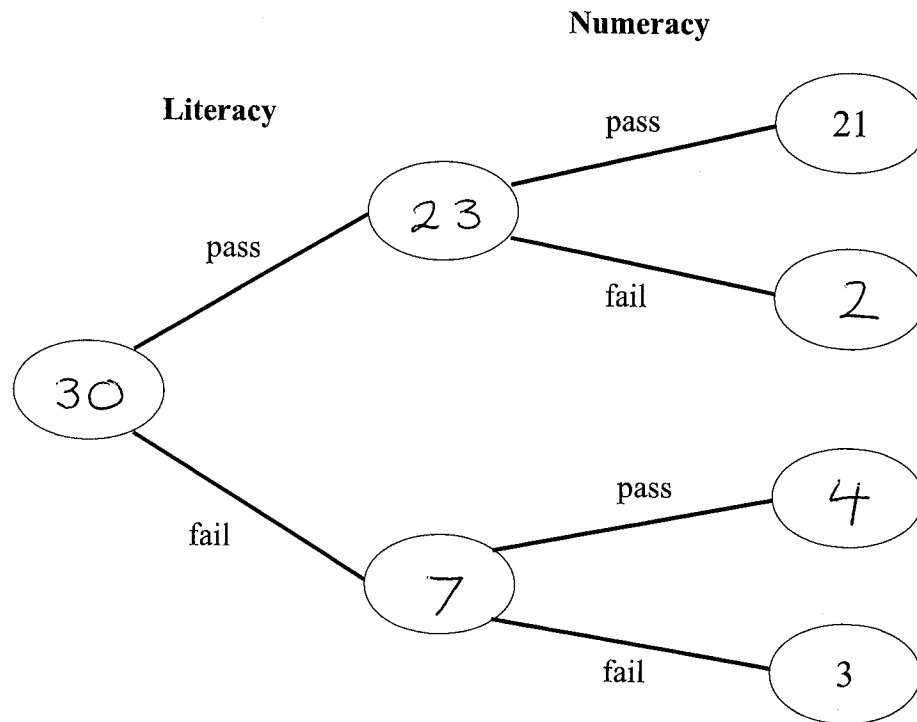 – *use this as a guide as to how much time to spend on each Question.*

Advice

- Read each Question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every Question.
- Check your answers if you have time at the end

1 30 people took a literacy test and a numeracy test.

23 of the people passed the literacy test.

(a) Use this information to complete the frequency tree.

Numeracy

Literacy

```
                                                    pass ──── ( 21 )
                              ( 23 )
                    pass                      fail ──── ( 2 )
        ( 30 )
                    fail
                              ( 7 )           pass ──── ( 4 )

                                              fail ──── ( 3 )
```

(3)

(b) Write down the number of people that passed the numeracy test.
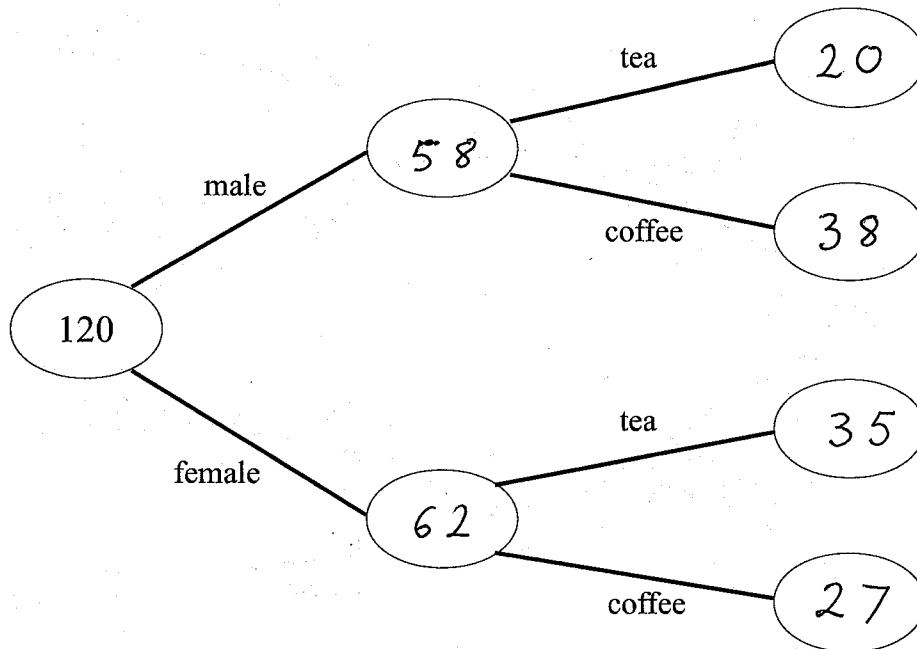
$21 + 4$

.......25.......

(1)

(Total for question 1 is 4 marks)

2　120 people were asked if they prefer tea or coffee.

58 of the people were male.
35 of the females preferred tea.
65 of the people preferred coffee.

(a) Use this information to complete the frequency tree.

(3)

One of the 120 people is chosen at random.

(b) Write down the probability that this person is female and preferred tea.
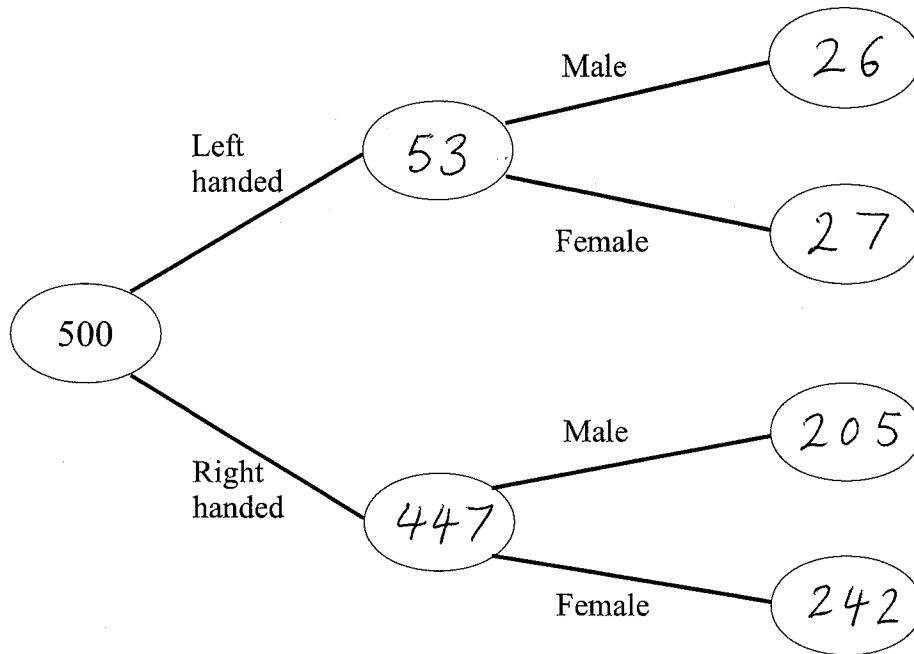
$$\frac{35}{120}$$

(1)

(Total for question 2 is 4 marks)

$$\left[OR \quad \frac{7}{24} \right]$$

3　500 people were surveyed.
All of the people were either left handed or right handed.

53 of the people are left handed.
26 males are left handed.
231 of the people are male.

(a) Use this information to complete the frequency tree.

```
                                              Male      ⎛ 26 ⎞
                        Left    ⎛ 53 ⎞ ──────────────────
                        handed  ⎝    ⎠
                       ╱                       Female    ⎛ 27 ⎞
         ⎛ 500 ⎞ ─────                         ──────────────────
         ⎝     ⎠
                       ╲                       Male      ⎛ 205 ⎞
                        Right   ⎛ 447 ⎞ ─────────────────
                        handed  ⎝     ⎠
                                               Female    ⎛ 242 ⎞
                                               ──────────────────
```

(3)

One of the **left handed** people is chosen at random.

(b) Write down the probability that this person is female.
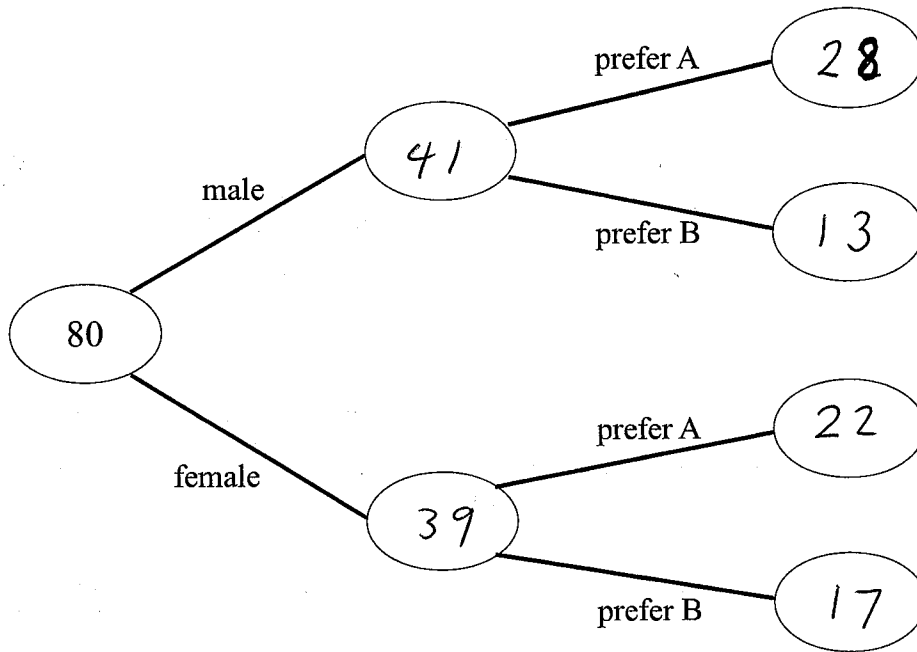
$$\frac{27}{53}$$

(2)

(Total for question 3 is 5 marks)

4   Caleb makes a cola drink.
     He is doing a taste test.
     He asks 80 people if they prefer cola A or cola B.

     41 of the people asked were male.
     22 of the 50 people that prefer cola A are female.

     (a) Use this information to complete the frequency tree.

(3)

One of the 80 people is chosen at random.

(b) Write down the probability that this person is male and preferred cola A.

$$\frac{28}{80}$$

(1)

(Total for question 4 is 4 marks)
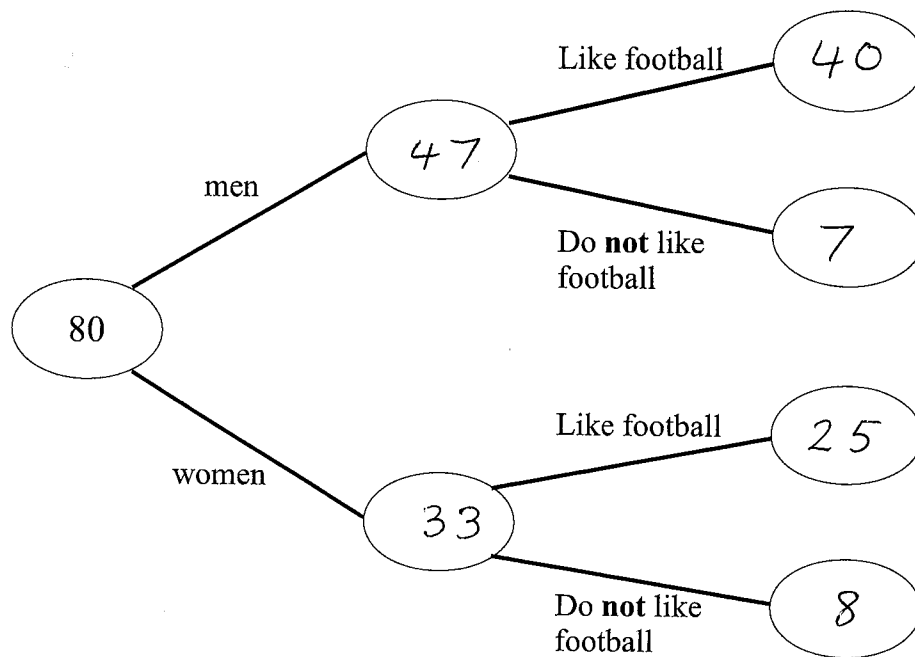
$$\left(ok \quad \frac{7}{20} \right)$$

5   80 people were asked if they like football.

47 of these people were men, the rest are women.
7 of the men do **not** like football.
65 of the 80 people like football.

(a) Use this information to complete the frequency tree.

(3)

One of the people who do **not** like football is chosen at random.

(b) Write down the probability that this person is a man.

$7 + 8 = 15$ Do not like football

$$\frac{7}{15}$$

(2)

(Total for question 5 is 5 marks)

6 60 students study a language at a school.
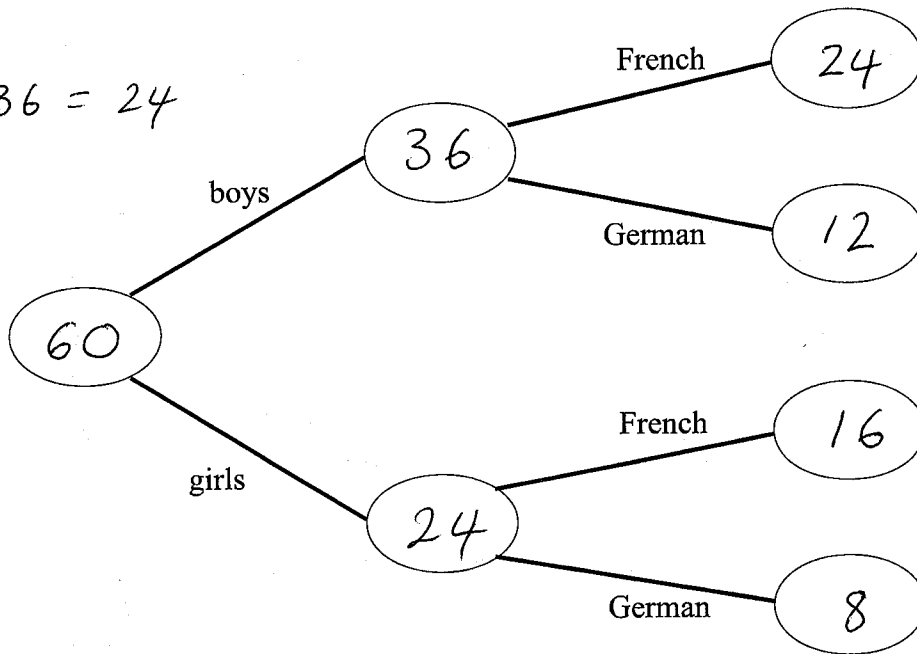Each student either studies French or German.

36 of the students are boys.

$\frac{2}{3}$ of the boys study French

40 students study French

Use this information to complete the frequency tree.

$\frac{2}{3} \times 36 = 24$

boys — 36 — French — 24

36 — German — 12

60

girls — 24 — French — 16

24 — German — 8

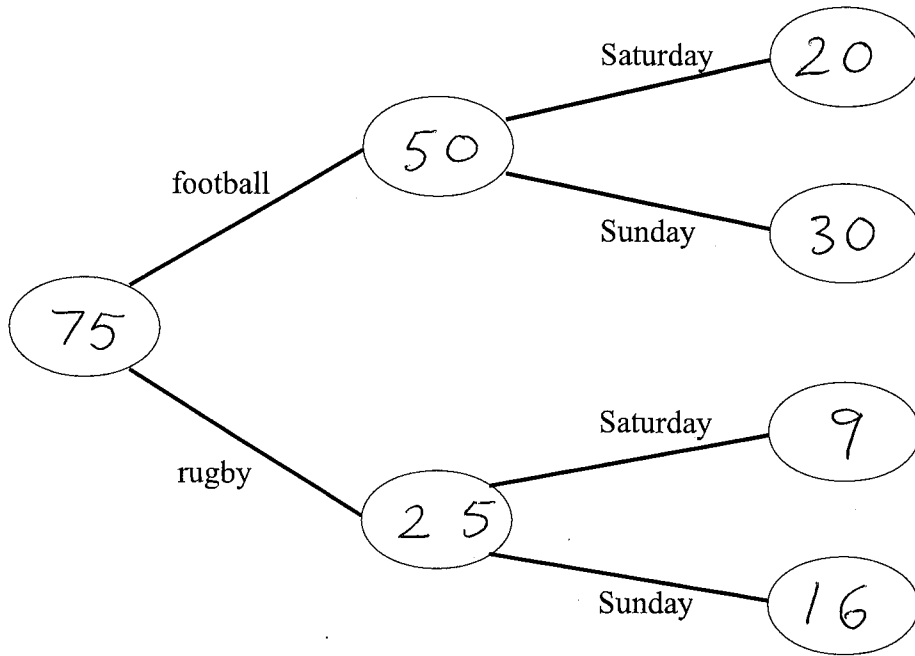**(Total for question 6 is 4 marks)**

7   75 students either go to a football club or a rugby club at the weekend.
     Each student either goes to the club on Saturday or Sunday.

     50 of the students go to a football club.

     $\frac{3}{5}$ of the students that go to a football club go on Sunday. $\frac{3}{5} \times 50 = 30$

46 students go to their club Sunday.

     Use this information to complete the frequency tree.

```
                                              Saturday      20
                                50
                    football              Sunday            30

        75

                    rugby                  Saturday         9
                                25
                                           Sunday           16
```

(Total for question 7 is 4 marks)