

AQA - Numbers – GCSE Mathematics Paper-1

1. **May/2020/Paper_1F/No.1**

Here are some numbers.

5	5	8	13	14	15	17
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Circle the range.

[1 mark]

5

11

12

13

2. **May/2020/Paper_1F/No.2**

Circle the value of the digit 5 in 256 934

[1 mark]

5000

500 000

50

50 000

3. **May/2020/Paper_1F/No.3**

Work out $-2 - 5$

Circle your answer.

[1 mark]

-7

-3

3

7

4. May/2020/Paper_1F/No.6

(a) Samir and Dan run a race.

Samir finishes in $2\frac{1}{2}$ minutes.

Dan finishes in 130 seconds.

Complete the following sentence.

[2 marks]

_____ wins by _____ seconds.

(b) Alice does a sponsored walk.

She starts from home on Monday at 8 am

She arrives back home 55 hours later.

Work out when she arrives back home.

[2 marks]

Day _____

Time _____

5. May/2020/Paper_1F/No.7

Work out $(43 \times 8) - (234 \div 6)$

[3 marks]

Answer _____

6. May/2020/Paper_1F/No.9

Harry will pay income tax if he earns more than £12 500 in a year.

After 8 months he has earned a total of £7600

For the rest of the year he earns £1200 each month.

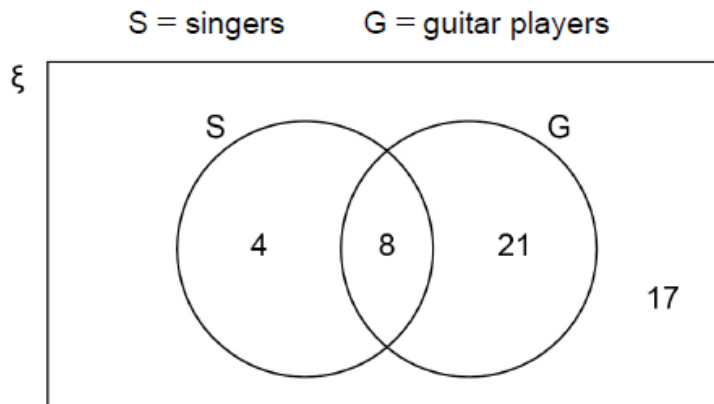
Will he pay income tax?

You **must** show your working.

[3 marks]

7. May/2020/Paper_1F/No.12

The Venn diagram shows information about 50 people who are in bands.



(a) How many of the people are guitar players?

[1 mark]

Answer _____

(b) How many of the people are singers but **not** guitar players?

[1 mark]

Answer _____

(c) One of the people is chosen at random.

Write down the probability that the person is

not a singer

and

not a guitar player.

[1 mark]

Answer _____

8. May/2020/Paper_1F/No.22

This formula converts temperature in degrees Fahrenheit (F) to kelvin (K)

$$K = \frac{5}{9}(F - 32) + 273$$

A pottery oven is heated to 2192 degrees Fahrenheit.

Work out this temperature in kelvin.

[3 marks]

Answer _____ kelvin

9. May/2020/Paper_1F/No.29

(a) Write 360 000 in standard form.

[1 mark]

Answer _____

(b) Write 9.2×10^{-3} as an ordinary number.

[1 mark]

Answer _____

10. May/2020/Paper_1H/No.3

Which one of these is a square number **and** a cube number?

Circle your answer.

[1 mark]

100

1000

10 000

1 000 000

11. May/2020/Paper_1H/No.7

Here is some information about 80 people who play in bands.

12 are singers but not guitar players.

30% are neither a singer nor a guitar player.

$\frac{1}{4}$ of the guitar players are also singers.

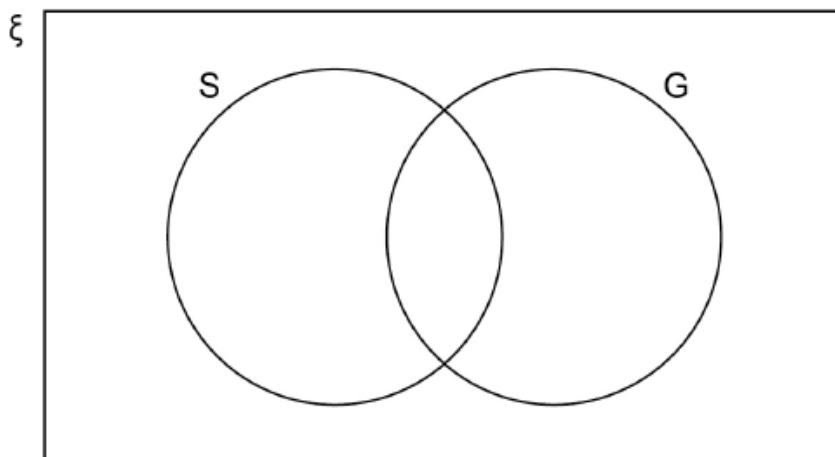
Complete this Venn diagram to represent the information.

[4 marks]

ξ = 80 people who play in bands

S = singers

G = guitar players



12. May/2020/Paper_1H/No.14

(a) $c = 2^{10} \times 3 \times 5^6$

Work out $18c$.

Give your answer as a product of prime factors in index form.

[2 marks]

Answer _____

(b) Work out $\sqrt[3]{\frac{2^7 \times 11^3}{2}}$

Give your answer as an integer.

[2 marks]

Answer _____

13. May/2020/Paper_1H/No.20

(a) Write down the value of 7^0

[1 mark]

Answer _____

(b) Work out the value of $32^{-\frac{3}{5}}$

[2 marks]

Answer _____

14. May/2020/Paper_1H/No.21

Write these numbers in order of size.

15.6

 $3\sqrt{23}$ 2.1^4 $\frac{47}{3}$

Start with the smallest.

[2 marks]

Smallest _____

Largest _____

15. May/2020/Paper_1H/No.26

- (a) Show that $\frac{14}{\sqrt{7}}$ can be written in the form $a\sqrt{b}$ where a and b are integers.

[2 marks]

- (b) Work out $2\sqrt{10} \times \sqrt{80} \times \sqrt{18}$

Give your answer as an integer.

[3 marks]

Answer _____

16. June/2019/Paper_1F/No.3

Work out $10 + (-4)$

Circle your answer.

[1 mark]

-14

-6

6

14

17. June/2019/Paper_1F/No.4

Circle the calculation which works out half of 12

[1 mark]

$12 \div 0.5$

$2 \div 12$

$12 \times \frac{1}{2}$

$12 \div 50 \times 100$

18. June/2019/Paper_1F/No.5

(a) Work out $364.5 + 17.9 - 2.08$

[2 marks]

Answer _____

(b) Work out 9.36×2

[1 mark]

Answer _____

19. June/2019/Paper_1F/No.7

Amy and Brad each have some money.

Carly has no money.

Amy gives £7 to Carly.

Brad gives £5 to Carly.

Now they all have the same amount of money.

How much money did Amy have to begin with?

[2 marks]

Answer £ _____

20. June/2019/Paper_1F/No.9

(a) Write down **all** the factors of 18

[2 marks]

Answer _____

(b) Work out the lowest common multiple (LCM) of 12 and 15

[2 marks]

Answer _____

21. June/2019/Paper_1F/No.10

Coaches take people to a festival.

Each coach can take 50 people.

(a) From one city there are 820 people.

How many coaches are needed?

[3 marks]

Answer _____

(b) From a different city 13 coaches are needed.

Each coach costs £450 to hire.

Work out the total cost of hiring 13 coaches.

[3 marks]

Answer £ _____

22. June/2019/Paper_1F/No.13

In a game the average score was 50

Tom's score was $\frac{5}{2}$ of the average.

Circle Tom's score.

[1 mark]

125

175

30

20

23. June/2019/Paper_1F/No.20

(a) Write 0.00097 in standard form.

[1 mark]

Answer _____

(b) Work out $\frac{3 \times 10^5}{4 \times 10^3}$

Give your answer as an ordinary number.

[2 marks]

Answer _____

24. June/2019/Paper_1F/No.23

Work out the value of $(3^{12} \div 3^5) \div (3^2 \times 3)$

[3 marks]

Answer _____

25. June/2019/Paper_1H/No.4

Circle the fraction that is equivalent to 4.625

[1 mark]

$$\frac{39}{8}$$

$$\frac{37}{8}$$

$$\frac{185}{4}$$

$$\frac{17}{4}$$

26. June/2019/Paper_1H/No.8

Work out the value of $(3^{12} \div 3^5) \div (3^2 \times 3)$

[3 marks]

Answer _____

27. June/2019/Paper_1H/No.11

Ed and Fay shared £330 in the ratio 7 : 4

Ed gives Fay some of his money.

Fay now has the same amount as Ed.

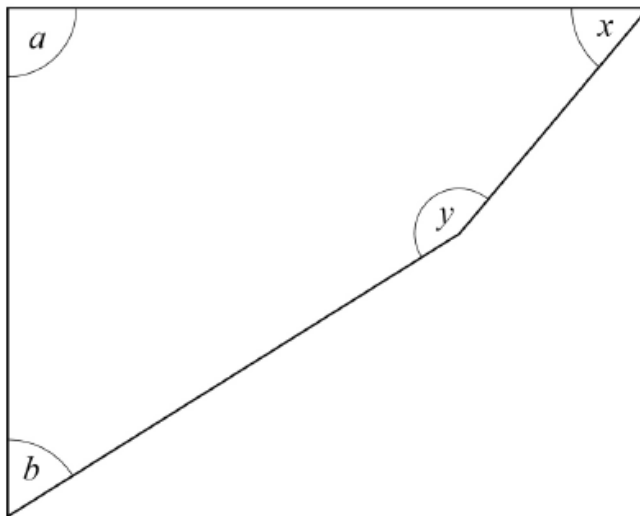
How much does Ed give Fay?

[3 marks]

Answer £ _____

28. June/2019/Paper_1H/No.14

Here is a quadrilateral.



Not drawn accurately

$$a = 90^\circ \quad \text{and} \quad a : b = 5 : 3$$

$$x : y = 1 : 3$$

Show that $b = x$

[3 marks]

29. June/2019/Paper_1H/No.24

$$f(x) = \sin(x - 90^\circ)$$

Circle the value of $f(0^\circ)$

[1 mark]

1

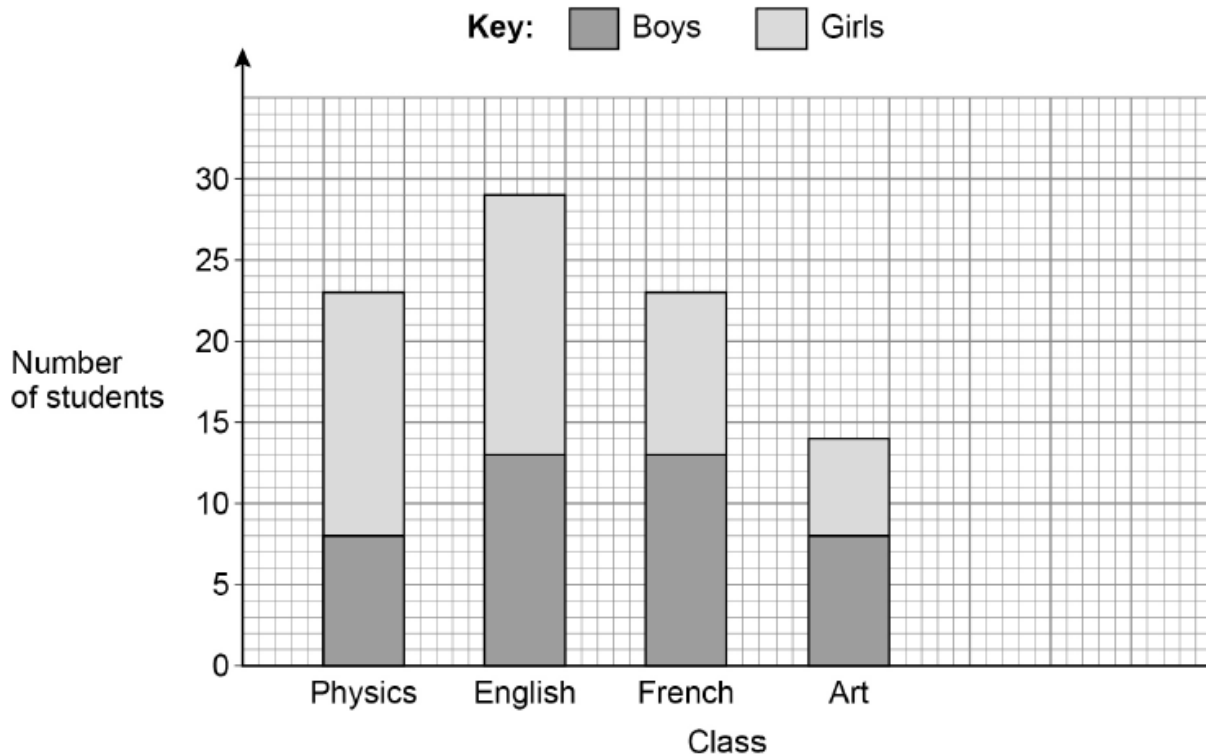
0

$-\frac{1}{2}$

-1

32. Nov/2019/Paper_1F/No.6

The composite bar chart shows the number of students in some classes.



(a) How many boys are in the Physics class?

[1 mark]

Answer _____

(b) How many girls are in the English class?

[1 mark]

Answer _____

(c) Which **two** classes have the same total number of students?

[1 mark]

Answer _____ and _____

(d) In the History class

there are 18 students

number of boys = number of girls

Show this information on the bar chart.

[2 marks]

33. *Nov/2019/Paper_1F/No.7*

(a) Work out $1.86 \div 6$

[1 mark]

Answer _____

(b) Work out 0.4×0.2

[1 mark]

Answer _____

34. Nov/2019/Paper_1F/No.8

Here are four number cards.



- (a) Choose **two** of the cards to make the answer to this calculation a whole number.
Include the answer to the calculation.

[2 marks]

$$\boxed{} + \boxed{} = \underline{\hspace{2cm}}$$

- (b) Choose **two** of the cards to make the answer to this calculation as large as possible.
Include the answer to the calculation.

[2 marks]

$$\boxed{} - \boxed{} = \underline{\hspace{2cm}}$$

35. Nov/2019/Paper_1F/No.9

Rulers
85p each

Pens
£3.50 each

Jenny buys 5 rulers and 2 pens.

She works out how much she should pay.

$$\begin{aligned}5 \times 85\text{p} &= \text{£}4.25 \\2 \times \text{£}3.50 &= \text{£}6.10 \\ \text{Total} &= \text{£}10.35\end{aligned}$$

Jenny's total is wrong.

What mistake has she made?

Include the correct total in your answer.

[2 marks]

Mistake made _____

Correct total £ _____

36. Nov/2019/Paper_1F/No.10

Here are three calculations, A, B and C.

A
 $100 \times 20\,000$

B
 $1 \text{ million} \div 2$

C
 $4 \times 100\,000$

Put the calculations in order.

Start with the calculation that has the smallest answer.

You **must** show the answer to each calculation.

[3 marks]

Smallest _____

Largest _____

37. Nov/2019/Paper_1F/No.13

By rounding each number to the nearest 10, estimate the value of $262 \div 19.8$

[2 marks]

Answer _____

38. Nov/2019/Paper_1F/No.16

Circle the value of 5^3

[1 mark]

8

15

25

125

39. Nov/2019/Paper_1F/No.27

Write $27 \times (3^2)^7$ as a single power of 3

[3 marks]

Answer _____

40. Nov/2019/Paper_1F/No.30

(a) Work out $\frac{2 \times 10^{14}}{8 \times 10^9}$

Give your answer in standard form.

[2 marks]

Answer _____

(b) $6200.07 = 6.2 \times 10^c + 7 \times 10^d$

Work out the values of c and d .

[2 marks]

$c =$ _____ $d =$ _____

41. Nov/2019/Paper_1H/No.4

Circle the expression equivalent to $(2x)^4$

[1 mark]

$2x^4$

$6x^4$

$8x^4$

$16x^4$

42. Nov/2019/Paper_1H/No.8

Write $27 \times (3^2)^7$ as a single power of 3

[3 marks]

Answer _____

43. Nov/2019/Paper_1H/No.11

(a) Work out $\frac{2 \times 10^{14}}{8 \times 10^9}$

Give your answer in standard form.

[2 marks]

Answer _____

(b) $6200.07 = 6.2 \times 10^c + 7 \times 10^d$

Work out the values of c and d .

[2 marks]

$c =$ _____ $d =$ _____

44. Nov/2019/Paper_1H/No.14

$$8300 = 100 \times 83$$

Circle the number that is closest in value to $\sqrt{8300}$

[1 mark]

19

90

830

900

