

Candidate Name: .....



# St Swithun's

## **Mathematics**

**12+ Entry**

**Past Paper**

**Time allowed: One hour**

### **Instructions to Candidates**

**Attempt as many questions as you can in the time available, writing your answers in the spaces provided.**

**Do not use any rough paper – all working must be shown on the examination paper.**

**Calculators are not allowed.**

1. Calculate the following:

a)  $1232 + 247$

Answer .....[2 marks]

b)  $4878 - 389$

Answer .....[2 marks]

c)  $91 \times 99$

Answer .....[3 marks]

2. a) Simplify the following fraction:

$$\frac{25}{40}$$

Answer .....[1 mark]

b) Write  $\frac{27}{8}$  as a mixed number.

Answer .....[2 marks]

3. Calculate the following:

a)  $4.23 \times 8$

Answer .....[3 marks]

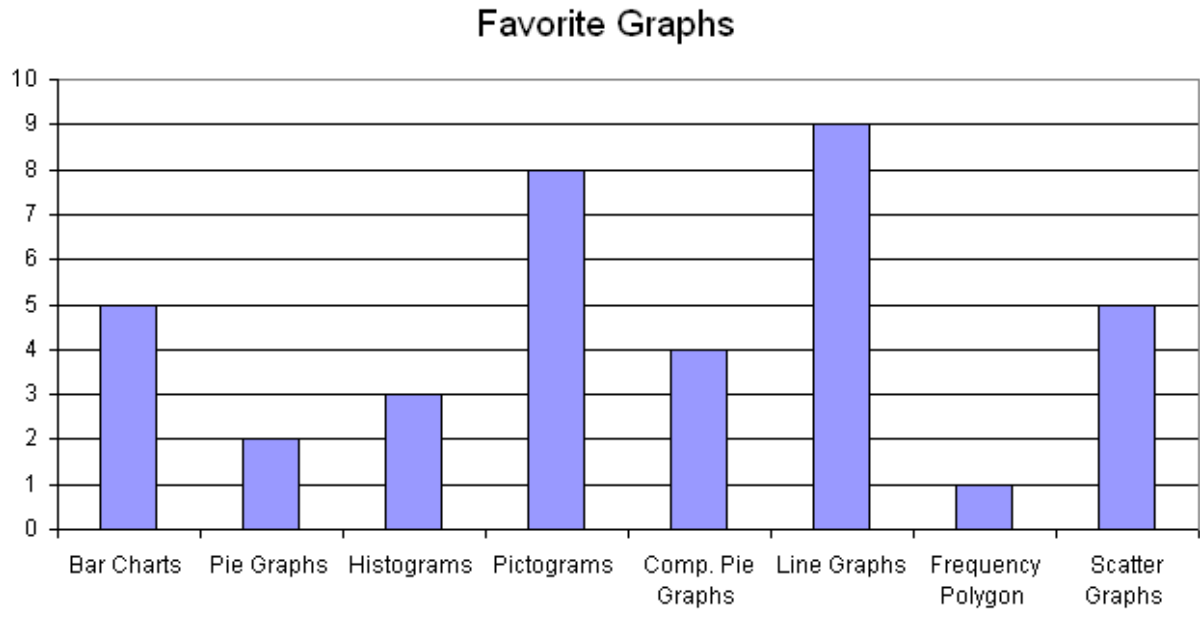
b)  $297.71 \div 0.7$

Answer .....[4 marks]

4. The probability of Zebedee winning the long jump competition is  $\frac{3}{4}$ . If he competes 20 times this summer, how many competitions would you expect him to win?

Answer ..... [2 marks]

5. The following bar chart, taken from an American newspaper, shows the results of asking some High School students their preferred diagram for representing data.



a) Which type of diagram is the most popular?

Answer .....[1 mark]

b) How many more students preferred Pictograms than Scatter Graphs?

Answer .....[2 marks]

c) How many students took part in the survey?

Answer .....[3 marks]

6. Think about the following sequences:

a) 60, 48, 36, 24

b) 2.8, 3.2, 3.6, 4

c) 5, 10, 20, 40

Give a possible “term-to-term” rule for each of the sequences.

a) .....

b) .....

c) .....

[3 marks]

7. George has worked out that the  $n^{\text{th}}$  term of a sequence can be found from the formula

$$n^{\text{th}} \text{ term} = 4n - 3$$

Find the first 4 terms of this sequence.

Answer ..... [4 marks]

8. If Beth scored 35 out of 40 on a test, what was her result as a percentage?

Answer ..... [2 marks]

9. The five cards shown are used to make the largest possible 5-digit number that is a multiple of 5. What is it?



Answer ..... [2 marks]

10. Give an example of a number with exactly three positive factors.

Answer ..... [2 marks]

11. Calculate the following, being careful to show all your working:

a)  $\frac{3}{4} + \frac{7}{8}$

Answer ..... [2 marks]

b)  $\frac{2}{3}$  of  $2\frac{1}{7}$

Answer ..... [3 marks]

12. Solve the following equations:

a)  $3x = 12$

Answer ..... [1 mark]

b)  $x + 8 = 20$

Answer ..... [1 mark]

c)  $\frac{x}{5} = 8$

Answer ..... [1 mark]

d)  $3x - 2 = 19$

Answer ..... [2 marks]

13. The mean of five positive numbers is 4 and the mode is 7.  
What are the five numbers? Explain how you arrived at your answer.

Answer ..... [4 marks]

14. The total cost of a bat and a ball is £1.10. The bat costs £1 more than the ball. What is the cost of the ball?

Answer .....[2 marks]

15. Pippa is visiting her grandparents. She spends half the time playing, a third sleeping and the remaining 35 minutes eating. How long is her visit?

Answer .....[2 marks]

16. Is the following argument valid?

*All roses are flowers.  
Some flowers fade quickly.  
Therefore some roses fade quickly.*

Explain your thinking carefully.

[2 marks]

17. A single amoeba in a beaker can divide into two in one minute. After another minute, each of those two amoebas splits into two, leaving four amoebas. At the end of forty minutes the beaker is full. How many minutes did it take for the beaker to be half full of amoebas?

Answer .....[2 marks]

END OF QUESTIONS