



Pocklington School

13+ Mathematics Sample 1 for 2020

Name	
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Time Allowed: 45 Minutes

- Calculators are not allowed.
- You are advised to show your working in the spaces provided and write your answers in the spaces provided.
- Use blue or black pen.
- If you make a mistake, cross it out but do not use tippex.
- Diagrams are not drawn to scale.

1. Calculate the following, showing a clear method where appropriate:

a. $4 \times (5^2 - 6 \times 2)$

_____ (2 marks)

b. $5471 + 85.1 + 7.163$

_____ (2 marks)

c. 3.2×1.7

_____ (2 marks)

d. $21.6 \div 0.8$

e. $5^3 \times 2$

_____ (2 marks)

f. $2187 \div 9$

_____ (2 marks)

_____ (2 marks)

2. Solve the following equations:

a. $7y = 84$

$y = \underline{\hspace{2cm}}$ (1 mark)

b. $\frac{x}{5} = 80$

$x = \underline{\hspace{2cm}}$ (1 mark)

c. $6x + 14 = 74$

$x = \underline{\hspace{2cm}}$ (2 marks)

d. $h^2 = 144$

$h = \underline{\hspace{2cm}}$ $h = \underline{\hspace{2cm}}$ (2 marks)

e. $5(3x + 1) = 65$

$x = \underline{\hspace{2cm}}$ (3 marks)

3. Round the following numbers to the accuracy stated in the brackets:

a. 658432 (3 significant figures)

_____ (1 mark)

b. 0.86701 (1 significant figure)

_____ (1 mark)

c. 7.95899 (2 decimal places)

_____ (1 mark)

d. 68.97527 (1 decimal place)

_____ (1 mark)

4. Simplify these expressions:

a. $8x + 3y - 6x + 9y$

_____ (2 marks)

b. $18 + 6q - 3p^2 - 2q - 5 + 4p^2$

_____ (2 marks)

5. Calculate the following. You must show all your working out. Give your answers as mixed numbers in their simplest form.

a. $3\frac{1}{3} - 1\frac{1}{4}$

_____ (3 marks)

b. $\frac{2}{7} \div \frac{4}{21}$

_____ (2 marks)

6. Expand these brackets and simplify where possible:

a. $5(3x + 2)$

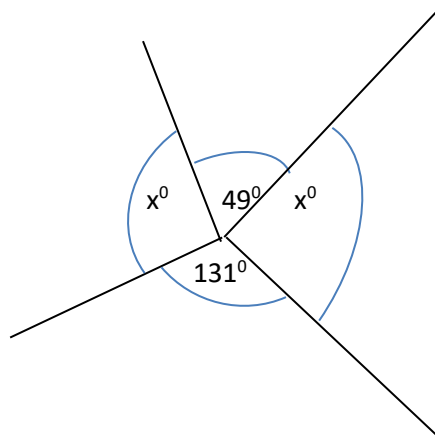
_____ (2 marks)

b. $2(4x + 3) - 3(x + 4)$

_____ (3 marks)

7. Calculate the size of angle x from the diagram below:

DIAGRAM NOT TO SCALE



Angle $x =$ _____ (2 marks)

8. Last year a brand new house cost £320000.
It increases in value by 5% each year.
How much will it be worth when it is 1 year old?

£ _____ (2 marks)

9. Write these numbers in order with the smallest first.

83.247 83.047 80.472 83.147 82.047

_____ (2 marks)

10. Write down the next 3 terms in each of these sequences:

a. 5, 9, 13, 17, 21, _____, _____, _____

b. -3, -8, -13, -18, -23, _____, _____, _____

c. 1, 3, 6, 10, 15, _____, _____, _____

d. 5.3, 6.4, 7.5, 8.6, 9.7, _____, _____, _____

(4 marks)

11. A car is travelling at 45 miles per hour. It continues at this speed for 3 hours. How far will it travel in this time?

_____ miles (2 marks)

11. Here is part of a train timetable from Beverley to London.

It shows the time in 24 hour clock, that the trains leave Beverley and arrive in London.

Beverley	06:02	.....	.....	.....	.....	.....	.....
Hull	06:26	08:23	10:30	12:33	15:13	17:10	19:11
Brough	06:38	08:36	10:43	12:45	15:25	17:22	19:23
Howden	06:49	08:47	10:56	12:56	15:36	17:35	19:34
Selby	07:00	09:01	11:06	13:06	15:47	17:45	19:45
Doncaster	07:21	09:25	11:25	13:25	16:05	18:03	20:03
Retford	07:40	09:39	11:39	13:39	16:19	18:17	20:17
Grantham	08:03	10:01	12:01	14:01	16:40	18:39	20:40
Stevenage	.....	.....	.....	.....	.....	.....	.....
London	09:13	11:10	13:07	15:10	17:45	19:45	21:46

- a. Jenny wants to arrive in London by 12:00 and she gets the latest train possible.
She arrives at Hull train station at 08:15.
How long will she have to wait at Hull train station?

_____ minutes (2 marks)

- b. How long does the 06:02 train take to get to London?

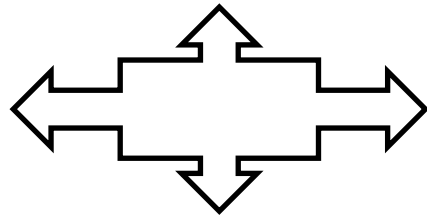
_____ hours and _____ minutes (1 mark)

- c. Jake arrives at Selby station at 19:32. He gets the next train to London.
How long will this train take to get to London?

_____ hours and _____ minutes (2 marks)

12. Look at the shapes below and draw on any lines of symmetry with a ruler.

(2 marks)



13. Share \$270 in the ratio 2:7

£ _____ £ _____ (2 marks)

14. Write these fractions as decimals:

a. $\frac{35}{100}$

_____ (1 mark)

b. $\frac{57}{10}$

_____ (1 mark)

15.

Calculate answers to the following expressions, when $a = 4$, $b = -3$ and $c = 2$.

a. $4bc + 2a^2$

_____ (3 marks)

b. $(c + b)^2$

_____ (2 marks)

c. $\frac{c^2}{4} + 2a$

_____ (2 marks)

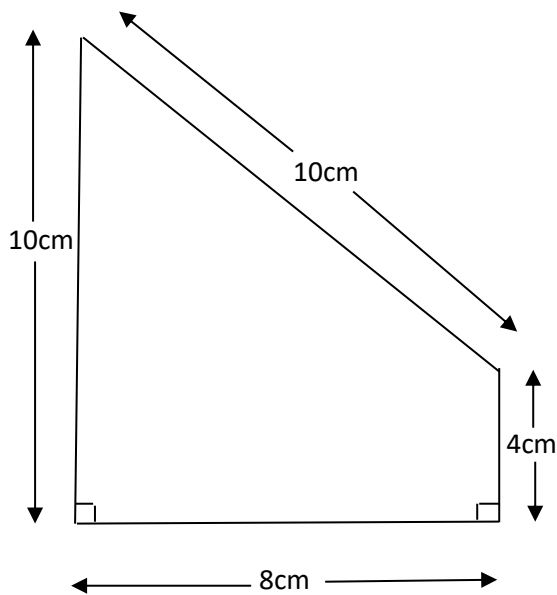
16.

- a. Find the area of the shape below. Show all your working out and state the units of your answer.

_____ (4 marks)

- b. Find the perimeter of this shape.

_____ cm (2 marks)



DAIGRAM NOT TO SCALE

17. Below is a table showing the cost of stamps.

Weight of Envelope (g)	Destination and Cost (£)	
0-60	Britain £0.65	USA £1.30
61-100	Britain £1.23	USA £1.55
101-200	Britain £1.45	USA £1.70
201-400	Britain 1.90	USA £2.15

- a. Write down the cost of posting an envelope weighing 55 grams to the USA.

£ _____ (1 mark)

- b. Calculate the cost of sending two envelopes weighing 120 grams each in Britain.

£ _____ (2 marks)

18. 20 children were asked how many hours per week they spent watching television.

These are the results:

5 7 4 3 6 5 5 2 4
6 7 2 5 4 4 3 7 6

Complete the tally chart showing the number of hours of television watched by this group of children.

(2 marks)

Number of Hours	Tally	Frequency
2		
3		
4		
5		
6		
7		

END OF ASSESSMENT