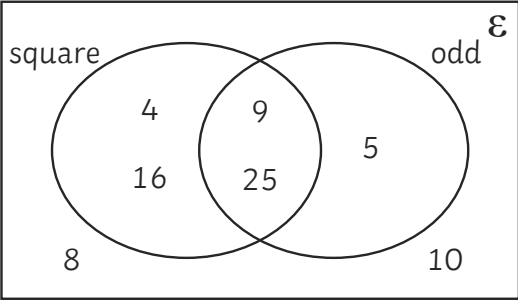
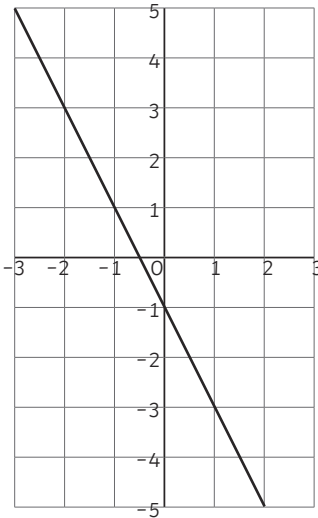


# KS3 Practice Paper

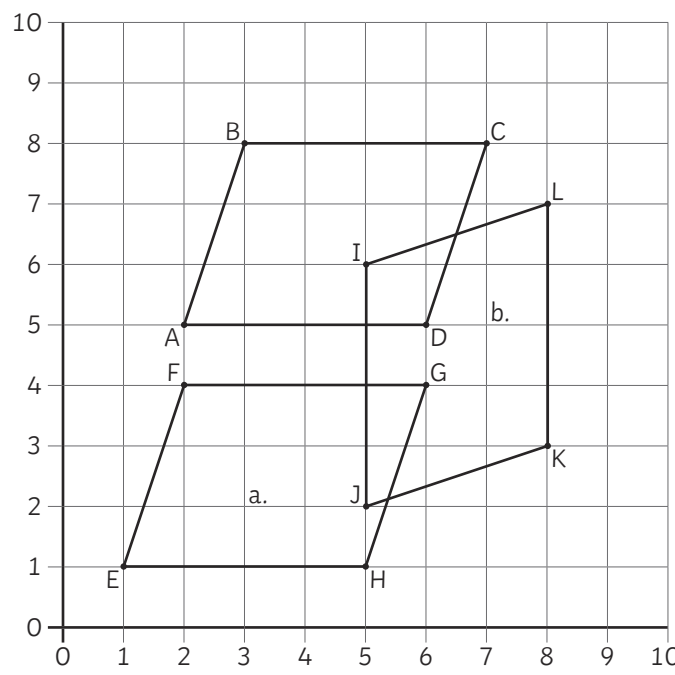
## Mathematics Higher Non-Calculator **Answers**

1.		2 marks total
	$\boxed{3} \boxed{4} \times \boxed{2} \boxed{7} = \boxed{9} \boxed{1} \boxed{8}$	2 marks or 1 mark for 1 correct digit.
2.		3 marks total
a.	78	1 mark
b.	12.6	2 marks or 1 mark for attempt to divide by 6.
3.		3 marks total
	 <p>A Venn diagram with two overlapping circles. The left circle is labeled 'square' and contains the numbers 4, 16, and 8. The right circle is labeled 'odd' and contains the numbers 5 and 10. The intersection of the two circles contains the numbers 9 and 25. A small '£' symbol is next to the 'odd' label.</p>	1 mark for 8 and 10 placed correctly. 1 mark for placing odd numbers correctly. 1 mark for placing square numbers correctly.
4.		1 mark total
	$7.1 \times 10^{-2}$	1 mark
5.		5 marks total
a.	32 000 or 3600 35 600 $3.56 \times 10^4$	1 mark or 2 marks or 3 marks
b.	$8 \times 10^5$ or $\frac{8 \times 10^5}{2 \times 10^{-3}}$ or $\frac{4\,000\,000 \times 0.2}{0.002}$ $4 \times 10^8$	1 mark or 2 marks
6.		3 marks total
	Cheapest: Buying three 6-packs and one 10-pack: £5.50.	1 mark
	Buying three 10-packs: £5.70.	1 mark
	Buying five 6-packs: £6.00.	1 mark



7.		2 marks total												
	$\frac{7 \times 50}{0.7}$ $500$	1 mark or 2 marks												
8.		2 marks total												
	$6x = 54$ $x = 9$	1 mark or 2 marks												
9.		3 marks total												
a.	$14a^2 + 21a$	1 mark												
b.	$b^2 + 9b - 9b - 81$ $b^2 - 81$	1 mark or 2 marks												
10.		6 marks total												
a.	<table border="1" style="display: inline-table; vertical-align: middle;"> <tbody> <tr> <td><math>x</math></td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> </tr> <tr> <td><math>y = -2x - 1</math></td> <td>3</td> <td>1</td> <td>-1</td> <td>-3</td> <td>-5</td> </tr> </tbody> </table>	$x$	-2	-1	0	1	2	$y = -2x - 1$	3	1	-1	-3	-5	2 marks or 1 mark for 3 correct $y$ -values.
$x$	-2	-1	0	1	2									
$y = -2x - 1$	3	1	-1	-3	-5									
b.		2 marks 1 mark for correct gradient <b>or</b> intercept. or 2 marks for <b>straight</b> line drawn correctly from <b>their</b> coordinates.												
c.	Gradient: 2.5 (or equivalent) $y$ -intercept: (0, -1)	1 mark 1 mark												
11.		6 marks total												
a.	$6 \times 8.30$ or £49.80 $49.80 + 3.99$ £53.79	1 mark or 2 marks or 3 marks												



b.	<p><math>48.30 + 3.99</math> or £52.29</p> <p><math>48.30 + 2.50</math> or £50.80</p> <p>Aaron saves money by avoiding the shipping fee.</p>	<p>1 mark</p> <p>or 2 marks</p> <p>1 mark</p> <p>Note: Only award full marks for supported answer. Conclusion without workings scores 0 marks.</p>
12.		2 marks total
	<p><math>r - 20 = 8p^2</math></p> <p><math>p = \sqrt{\frac{r-20}{8}}</math></p>	<p>1 mark</p> <p>or 2 marks</p>
13.		4 marks total
a.	4, 13, 22, 31, 40	<p>2 marks</p> <p>or 1 mark for 3 correct terms.</p>
b.	<p><math>3n</math> or <math>4</math></p> <p><math>3n + 4</math></p>	<p>1 mark</p> <p>or 2 marks</p>
14.		2 marks total
	<p><math>9.5 \div \frac{2}{3}</math> or <math>40 \div 60</math> or 0.2375 km/minute</p> <p>14.25km/h</p>	<p>1 mark</p> <p>or 2 marks</p>
15.		3 marks total
a.		<p>2 marks for EFGH</p> <p>Or 1 mark for translated shape 1 square left or 4 squares down.</p> <p>1 mark for IJKL</p>



16.		7 marks total
a.	$\frac{7}{10}$	1 mark
b.	$\frac{1}{11}$	1 mark
c.	$\frac{9}{11}$	1 mark
d.	Listing the outcomes or $\frac{1}{2} \times \frac{4}{11}$ $\frac{2}{11}$ or equivalent	1 mark or 2 marks
e.	$\frac{7}{11}$ seen or implied $\frac{70}{110}$ and $\frac{77}{110}$ or equivalent seen. Jared has a greater chance of choosing a blue.	1 mark or 2 marks Answer without justification scores 0 marks.
17.		2 marks total
	Attempt to convert to a decimal with no more than 1 error in the first 4 decimal places. 57.1%	1 mark 2 marks
18.		4 marks total
a.	$35 \times 10 \times 3.5$ $1225\text{m}^3$	1 mark or 2 marks
b.	$25 \times 8$ or 200m 3m	1 mark or 2 marks
Total		60 marks

