

Independent Study Pack 11.3



Please work through this booklet so that it can be marked and feedback given.

- ✓ Use your own workbook to complete the tasks.
- ✓ Use the booklet to complete the tasks.

Name

VMG

Maths:

Complete 1 hour on Hegarty maths. Your teacher will be able to see what you have completed and give you feedback.

This extract is from the novel *Every Man for Himself* by Beryl Bainbridge. Although it was written in 1996, it is about the sinking of the Titanic in 1912. Here, Morgan, the wealthy narrator, relates the moment the ship sinks.

At that moment, the orchestra changed tune and struck up a hymn, one I knew well because it was a favourite of my aunt's and sometimes she used to sing it when she was in one of her brighter moods...E'en though it be a cross that raiseth me, Still all my song shall be, Nearer my God to Thee, Nearer to Thee. Hearing it, I knew I had to go in search of Charlie, for Lady Melchett's sake if not for my own, and would have gone searching for him if Scurra hadn't been waiting for me at the bottom of the steps. He said, 'A man bears the weight of his own body without knowing it, but he soon feels the weight of any other object. There is nothing, absolutely nothing that a man cannot forget – but not himself.' Then, before walking away, he said those other things, about it being the drop, not the height, that was terrible, and I left Charlie to God and went back up to the officers' houses.

And now, the moment was almost upon us. The stern began to lift from the water. Guggenheim and his valet played mountaineers, going hand over hand up the rail. The hymn turned ragged; ceased altogether. The musicians scrambled upwards, the spike of the cello scraping the deck. Clinging to the rung of the ladder, I tried to climb to the roof but there was such a sideways slant that I waved like a flag on a pole. I thought I must make a leap for it and turned to look for Hopper. Something, some inner voice urged me to glance below and I saw Scurra again, one arm hooked through the rail to steady himself. I raised my hand in greeting – then the water, first slithering, then tumbling, gushed us apart.

As the ship staggered and tipped, a great volume of water flowed in over the submerged bows and tossed me like a cork to the roof. Hopper was there too. My fingers touched some kind of bolt near the ventilation grille and I grabbed it tight. I filled my lungs with air and fixed my eyes on the blurred horizon, determined to hang on until I was sure I could float free rather than be swilled back and forth in a maelstrom. I wouldn't waste my strength in swimming, not yet, for I knew the ship was now my enemy and if I wasn't vigilant, would drag me with her to the grave. I waited for the next slithering dip and when it came and the waves rushed in and swept me higher, I released my grip and let myself be carried away, over the tangle of ropes and wires and davits, clear of the rails and out into the darkness. I heard the angry roaring of the dying ship, the deafening cacophony as she stood on end and all her guts tore loose. I choked on soot and cringed beneath the sparks, dancing like fire-flies as the forward funnel broke and smashed the sea in two. I thought I saw Hopper's face but one eye was ripped away and he gobbled like a fish on a hook. I was sucked under, as I knew I would be, down, down, and I still waited, waited until the pull slackened – and then I struck out with all my strength.

I don't know how long I swam under that lidded sea – time had stopped with my breath – and just as it seemed as if my lungs would burst, the blackness paled and I kicked to the surface. I had thought I was entering paradise, for I was alive and about to breathe again, and then I heard the cries of souls in torment and believed myself in hell. Dear God! Those voices! Father...Father...For the love of Christ...Help me, for pity's sake!...Where is my son? Some called for their mothers, some on the Lord, some to die quickly, a few to be saved. The lamentations rang through the frosty air and touched the stars; my own mouth opened in a silent howl of grief. The cries went on and on, trembling, lingering – and God forgive me, but I wanted them to end. In all that ghastly night it was the din of dying that chilled the most. Presently the voices grew

fainter, ceased – yet I still heard them, as though the drowned called to one another in a ghostly place where no-one could follow. Then silence fell, and that was the worst of all. There was no trace of the Titanic. All that remained was a grey veil of vapour drifting above the water.

Checking understanding

Circle the correct answers.

1. On line 11, the writer uses the noun **valet**. Which definition best matches the word?

[a] a servant	[b] a person employed to clean or park cars	[c] a man's personal male attendant	[d] a friend
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2. On line 11, the writer uses the verb **cease**. Which definition best matches the word?

[a] to break	[b] to continue	[c] to finish, especially suddenly	[d] to ease to a stop
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3. On line 21, the writer uses the noun **maelstrom**. Which definition best matches the word in this context?

[a] a powerful storm	[b] a powerful whirlpool	[c] a battle or fight	[d] a calm ocean
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4. On line 22, the writer uses the adjective **vigilant**. Which definition best matches the word?

[a] keeping careful watch for danger	[b] preparing for battle	[c] ignoring events around you	[d] preparing to abandon ship
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5. On line 25, the writer uses the noun **cacophony**. Which definition best matches the word?

[a] a confused conversation	[b] a harsh discordant mix of sounds	[c] a chaotic shouting	[d] a series of lies
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6. The narrator is travelling with his aunt.

True	False
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7. There is silence after the ship sinks.

True	False
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Improving analysis

The following are extracts from the text. Decide which analysis of the extract is the best one.

8. the ship was now my enemy and if I wasn't vigilant, would drag me with her to the grave

<p>The personification of the ship as an 'enemy' suggests the narrator is in a battle which he is unlikely to win.</p>	<p>The personification of the ship 'drag[g]ing me with her to the grave' suggests not only the power of the vessel, but also that it has a motive; the verb 'drag' implies it will take the narrator by force.</p>	<p>The personification of the ship as an 'enemy' creates a conflict between the narrator and the vessel, which he intends to win.</p>
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9. he gobbled like a fish on a hook

<p>The verb 'gobbled' implies that the man has lost all of his senses; as he becomes more animal-like, he loses the ability to speak and communicate.</p>	<p>The simile 'like a fish on a hook' dehumanises the man and makes him seem less important than the other people on board the ship; this reveals the strict class differences on board the Titanic and how disposable the third-class passengers were.</p>	<p>The comparison to a 'fish' places the man in an inferior position, as if he is now the prey of the ship; it is perhaps ironic that he is 'on a hook' as he is about to move into the ocean, whilst a fish on a hook is taken from it, showing how unsuited the man is to his new environment.</p>
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10. Those voices! Father...Father...For the love of Christ...Help me, for pity's sake!...Where is my son?

<p>These fragmented clauses reflect the chaos in the aftermath of the ship sinking, with the references to family members ('Father', 'son') creating a particularly sad and tragic tone.</p>	<p>The use of ellipses shows how confusing this moment is for the narrator as he only hears fragments of speech and does not know who is talking or if they are saved; this makes this very sad.</p>	<p>The mix of voices and shouts helps to show how frightening this moment is for the narrator as he exclaims 'Those voices!'.</p>
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Density



1. In each of the following questions find the **density**. State the units of your answer.

- | | | | |
|----------|-------------------------------------|----------|---|
| a | Mass 45g, volume 5cm^3 | d | Mass 18.9g, volume 9cm^3 |
| b | Volume 7cm^3 , mass 56g | e | Mass 4340kg, volume 7m^3 |
| c | Volume 0.4m^3 , mass 688kg | f | Volume 12.8cm^3 , mass 8601.6cm^3 |

2. In each of the following questions find the **mass**. State the units of your answer.

- | | | | |
|----------|---|----------|---|
| a | Density $5\text{g}/\text{cm}^3$, volume 4cm^3 | d | Density $190\text{kg}/\text{m}^3$, volume 3m^3 |
| b | Volume 19cm^3 , density $8\text{g}/\text{cm}^3$ | e | Volume 4m^3 , density $5450\text{kg}/\text{m}^3$ |
| c | Volume 3cm^3 , density $1.4\text{g}/\text{cm}^3$ | f | Density $960\text{kg}/\text{m}^3$, Volume 0.25m^3 |

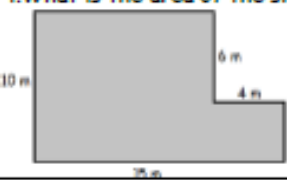
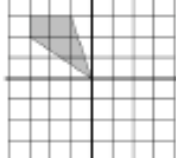
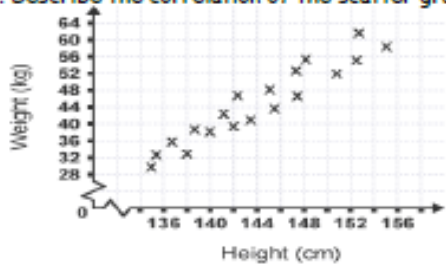
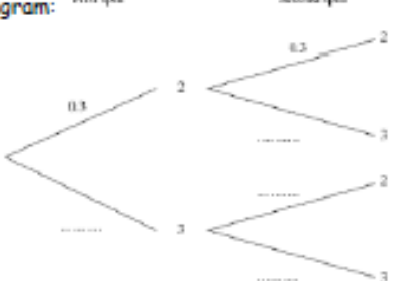

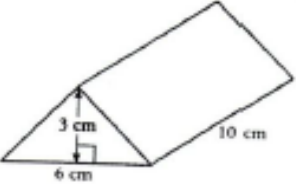
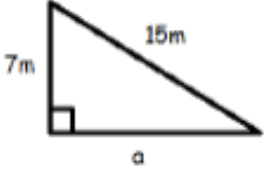
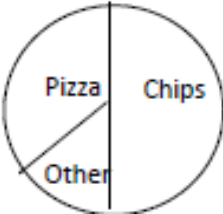
3. In each of the following questions find the **volume**. State the units of your answer.

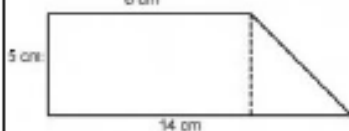
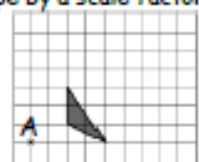
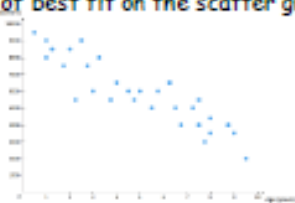
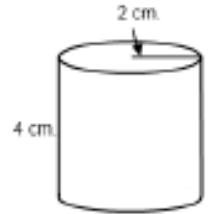
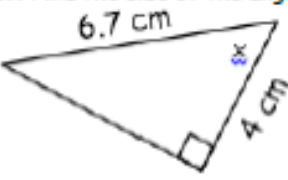
- | | | | |
|----------|--|----------|---|
| a | Density $1.4\text{g}/\text{cm}^3$, mass 5.6g | d | Density $800\text{kg}/\text{m}^3$, mass 4800kg |
| b | Mass 4.2g, density $0.7\text{g}/\text{cm}^3$ | e | Mass 420kg, density $140\text{kg}/\text{m}^3$ |
| c | Mass 16.32g, density $2.4\text{g}/\text{cm}^3$ | f | Density $6904\text{kg}/\text{m}^3$, Mass 28306.4kg |

4. Lead has a density of $11.5\text{g}/\text{cm}^3$. A rectangular block of lead measures $7\text{cm} \times 5\text{cm} \times 2\text{cm}$.

- Find the volume of the block of lead.
- Find the mass of the block of lead

Maths:

1. Round 4.6523 to 1 significant figure.	2. Expand $4(2x - 3)$																		
3. Share £45 in the ratio 4:5	4. What is the area of the shape below? 																		
5. The probability of a biased coin landing on heads is 0.6. I flip the coin 150 times, how many times would the coin land on heads?	6. Compare the median and range of the two sets of data below: Set A: 2, 3, 4, 8, 10, 12 Set B: 3, 5, 7, 7, 8, 9																		
7. Work out $\frac{5}{8} + \frac{3}{4}$	8. If $a=10$, $b=4$ and $c=5$, what is the value of: $\frac{2ac}{b}$																		
9. The exchange rate from Pounds Sterling to Australian Dollars is £1 = \$1.82. How many dollars should I get for £300?	10. Reflect the shape in the y axis 																		
11. Describe the correlation of the scatter graph. 	12. Complete the tree diagram: 																		
13. Write $a^4 \times a^2$ as a single term.	14. Represent $x < 4$ on the number line below. 																		
15. What is the volume of the prism below? 	16. Use the table to find the mean number of detentions a Y8 pupil receives in one week. <table border="1"> <thead> <tr> <th>Number of detentions</th> <th>Frequency</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>63</td> <td></td> </tr> <tr> <td>1</td> <td>45</td> <td></td> </tr> <tr> <td>2</td> <td>37</td> <td></td> </tr> <tr> <td>3</td> <td>55</td> <td></td> </tr> <tr> <td>Total</td> <td></td> <td></td> </tr> </tbody> </table>	Number of detentions	Frequency		0	63		1	45		2	37		3	55		Total		
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17. If the height of an athlete is measured as 185cm to the nearest cm, what is the smallest and largest possible height they could be?	18. Expand the following: $(x+3)(x+4)$																		
19. Find the length of the side labelled a. 	20. If the pie chart below represents favourite dinners of 300, how many people chose pizza? 																		

<p>1. Estimate the following:</p> $\frac{23.5 + 37.89}{1.8}$	<p>2. Factorise the following expression: $3x + 15$</p>																		
<p>3. Alan and George receive some money in the ratio 2:5. The total received was £490, how much did George get?</p>	<p>4. What is the area of the following shape?</p> 																		
<p>5. If the probability of picking a red rose from a garden is 0.4, how many of the next 280 flowers picked would be red?</p>	<p>6. Compare the median and range of the test scores below from two classes.</p> <p>Class A: 25, 34, 58, 70, 72, 75, 76</p> <p>Class B: 32, 36, 56, 66, 68, 81, 90</p>																		
<p>7. Work out $4\frac{1}{2} \times \frac{3}{4}$</p>	<p>8. If $c = 50$, $d = 3$ and $e = 60$, calculate $\frac{2cd}{e} =$</p>																		
<p>9. If it takes 2 builders 30 minutes to build a wall of 50 bricks, how long would it take 4 builders to build a wall of 200 bricks.</p>	<p>10. Enlarge the shape by a scale factor of 2 from the point A.</p> 																		
<p>11. Draw a line of best fit on the scatter graph below.</p> 	<p>12. A bag contains 3 red and 5 white toys. Rose picked two toys one after the other. Draw a tree diagram which represents all the possible combinations Rose may pick.</p>																		
<p>13. Write $4a^3 \times 2a$ as a single term</p>	<p>14. Solve the following inequality $4x - 3 < 15$</p>																		
<p>15. What is the volume of the cylinder below?</p> 	<p>16. Use the table to find the mean number of goals Sports FC scores each game</p> <table border="1"> <thead> <tr> <th>Number of goals</th> <th>Frequency</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td>4</td> <td></td> </tr> <tr> <td>2</td> <td>8</td> <td></td> </tr> <tr> <td>3</td> <td>6</td> <td></td> </tr> <tr> <td>Total</td> <td></td> <td></td> </tr> </tbody> </table>	Number of goals	Frequency		0	2		1	4		2	8		3	6		Total		
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<p>17. A shot putt throw was estimated to 56m to the nearest m, what are the upper and lower bounds of the throw?</p>	<p>18. Expand the following: $(x + 5)(x - 3)$</p>																		
<p>19. Find the size of the angle labelled x.</p> 	<p>20. If the following data was represented on a pie chart, what angle would each sector have for each category?</p> <table border="1"> <thead> <tr> <th>Sport</th> <th>Frequency</th> <th>Angle</th> </tr> </thead> <tbody> <tr> <td>Rugby</td> <td>22</td> <td></td> </tr> <tr> <td>Hockey</td> <td>15</td> <td></td> </tr> <tr> <td>Netball</td> <td>17</td> <td></td> </tr> <tr> <td>Other</td> <td>6</td> <td></td> </tr> </tbody> </table>	Sport	Frequency	Angle	Rugby	22		Hockey	15		Netball	17		Other	6				
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