

# UCAT

## Quantitative Reasoning 2



## White Goods(Q1 to Q8)

An online store offers the following products for sale. Each product comes with various options, as follows:

Product	Price	Delivery	Installation
Washing machine	£349	£30	Not known
Washer dryer	£452	£25	£15
Dishwasher	£353	£35	£23
Fridge	£412	£23	Free
Freezer	£383	£25	Free
Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.



Q1)

An online store offers the following products for sale. Each product comes with various options, as follows:

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Washer dryer	£452	£25	£15
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Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.

What would be the cost of getting a dishwasher delivered and installed on a Monday?

- a. £353      b. £376      c. £388      d. £411      e. £426



Q2)

An online store offers the following products for sale. Each product comes with various options, as follows:

Product	Price	Delivery	Installation
Washing machine	£349	£30	Not known
Washer dryer	£452	£25	£15
Dishwasher	£353	£35	£23
Fridge	£412	£23	Free
Freezer	£383	£25	Free
Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.

What would be the cost of getting a fridge delivered and installed on a Saturday?

- a. £412      b. £435      c. £450      d. £475      e. £495





Q3)

An online store offers the following products for sale. Each product comes with various options, as follows:

Product	Price	Delivery	Installation
Washing machine	£349	£30	Not known
Washer dryer	£452	£25	£15
Dishwasher	£353	£35	£23
Fridge	£412	£23	Free
Freezer	£383	£25	Free
Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.

Tessa wants to buy a fridge-freezer instead of a fridge and a separate freezer. She can only take deliveries on Saturdays. How much would she save by buying a combined fridge-freezer compared to buying two separate appliances?

- a. £209      b. £219      c. £224      d. £234      e. £249



Q4)

An online store offers the following products for sale. Each product comes with various options, as follows:

Product	Price	Delivery	Installation
Washing machine	£349	£30	Not known
Washer dryer	£452	£25	£15
Dishwasher	£353	£35	£23
Fridge	£412	£23	Free
Freezer	£383	£25	Free
Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.

The installation price for the washing machine is missing from the website. However, a client would pay a total of £416 for delivery and installation of a washing machine on a Saturday. What is the installation cost?

- a. Free      b. £15      c. £22      d. £23      e. £37





Q5)

An online store offers the following products for sale. Each product comes with various options, as follows:

Product	Price	Delivery	Installation
Washing machine	£349	£30	Not known
Washer dryer	£452	£25	£15
Dishwasher	£353	£35	£23
Fridge	£412	£23	Free
Freezer	£383	£25	Free
Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.

Julia has a voucher that gives her a 30% discount. The discount applies only to the price of the item, not on the delivery or installation charge, which she must pay in full. How much would she pay if she wanted the dishwasher, delivered and installed on a Tuesday?

- a. £123.30    b. £163.60    c. £178.60    d. £305.10    e. £320.10



Q6)

An online store offers the following products for sale. Each product comes with various options, as follows:

Product	Price	Delivery	Installation
Washing machine	£349	£30	Not known
Washer dryer	£452	£25	£15
Dishwasher	£353	£35	£23
Fridge	£412	£23	Free
Freezer	£383	£25	Free
Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.

John has a voucher that gives him a 20% discount on any appliance sold on that online store. The discount applies only to the price of the item, not on the delivery or installation charge, which he must pay in full. He selects a product and opts for delivery and installation on a Thursday. The total invoice after discount is £401.60. Which product did he buy?

- a. Washer dryer      b. Dishwasher      c. Fridge  
d. Freezer              e. Fridge-freezer





Q7)

An online store offers the following products for sale. Each product comes with various options, as follows:

Product	Price	Delivery	Installation
Washing machine	£349	£30	Not known
Washer dryer	£452	£25	£15
Dishwasher	£353	£35	£23
Fridge	£412	£23	Free
Freezer	£383	£25	Free
Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.

The owners of the online shop are thinking of changing their policy for the delivery charge such that the delivery charge will be a flat fee for all products. They would like that the delivery charge does not exceed 10% of the purchase price of the item. What is the maximum delivery charge they can impose for all items?

- a. £34.90    b. £35.30    c. £41.20    d. £45.20    e. £58.60



Q8)

An online store offers the following products for sale. Each product comes with various options, as follows:

Product	Price	Delivery	Installation
Washing machine	£349	£30	Not known
Washer dryer	£452	£25	£15
Dishwasher	£353	£35	£23
Fridge	£412	£23	Free
Freezer	£383	£25	Free
Fridge-freezer	£586	£38	Free

Prices for delivery are for weekday delivery only. Deliveries on a Saturday incur a surcharge of £15 for each item purchased.

Customers who order two items will need to pay the delivery charge for each item as if the items had been ordered separately.

The owners are thinking of selling extended-warranty products for each appliance. The cost of such a warranty is £4 per month, for a maximum of 5 years. No warranty is offered after 5 years. If a customer decided to take out the 5-year warranty on a fridge, how much more expensive would this work out over the full 5-year period, assuming the fridge was delivered on a Tuesday and did not develop any fault over that period?

- a. 11.1%      b. 11.7%      c. 33.2%      d. 55.2%      e. 58.2%



## Field Areas(Q9 to Q13)

Consider the following rectangular field (dimensions in metres (m)):

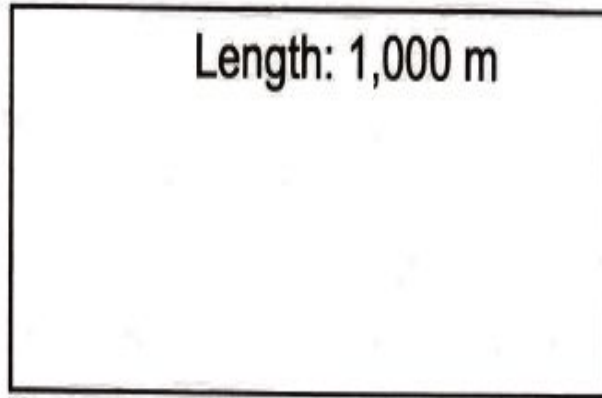
Length: 1,000 m

Width: 500 m



Q9)

Consider the following rectangular field (dimensions in metres (m)):



Length: 1,000 m

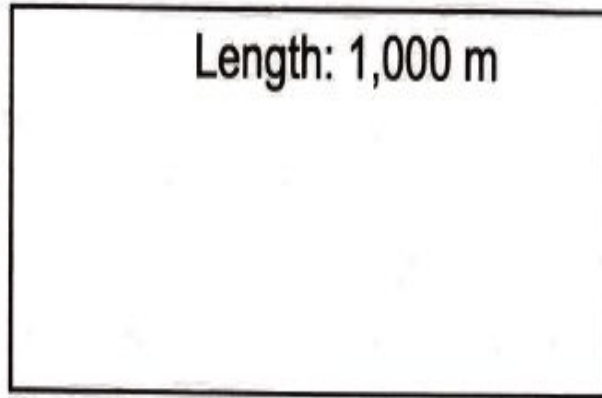
Width: 500 m

An architect has found a map on which the field is being shown with a width of 25 cm on paper. What scale was used?

- a. 1:2000    b. 1:4000    c. 1:5000    d. 1:10000    e. 1:50000

Q10)

Consider the following rectangular field (dimensions in metres (m)):



If we extend the length of the field by 150 m and the width remains the same, by what percentage does the field's perimeter increase?

**a. 2%**

**b. 10%**

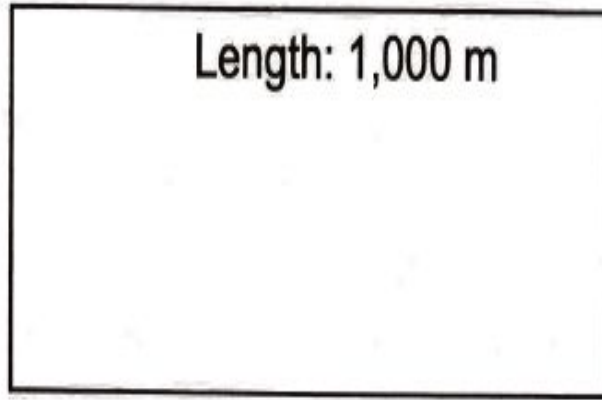
**c. 15%**

**d. 30%**

**e. 45%**

Q11)

Consider the following rectangular field (dimensions in metres (m)):



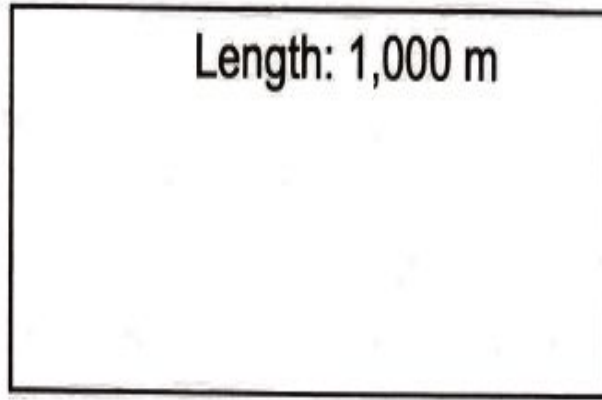
If we wanted a field with the same perimeter but in a square shape, how would the surface area of the square compare to that of the rectangle?

- a. Greater    b. Equal    c. Lower    d. Requires further info



Q12)

Consider the following rectangular field (dimensions in metres (m)):

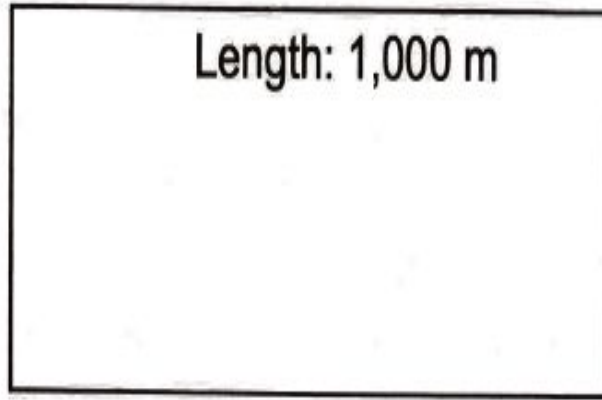


A lawnmower is used to mow the grass on the field. The lawnmower can mow strips that are 50 cm wide. What is the minimum distance the lawnmower will need to travel in order to cover the area of the whole field, assuming there is no overlap?

- a. 1 km    b. 10 km    c. 100 km    d. 500 km    e. 1,000 km

Q13)

Consider the following rectangular field (dimensions in metres (m)):



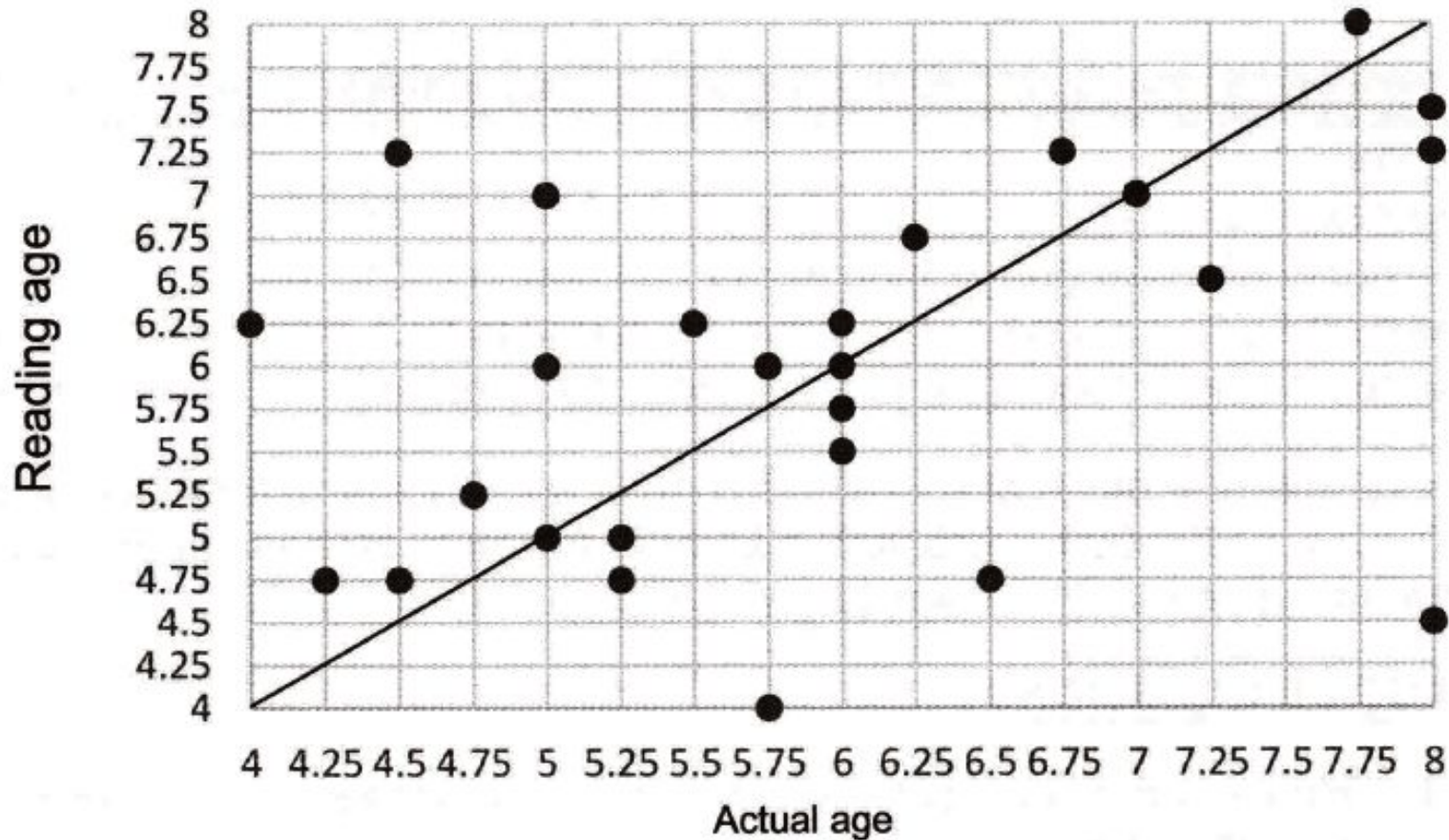
Width: 500 m

If we wanted to draw the field on paper using a scale of 1:10000, what would the surface area of the drawn rectangle be?

- a. 0.5 cm<sup>2</sup>**    **b. 5 cm<sup>2</sup>**    **c. 50 cm<sup>2</sup>**    **d. 500 cm<sup>2</sup>**    **e. 5000 cm<sup>2</sup>**

# Actual vs Reading Range(Q14 to Q17)

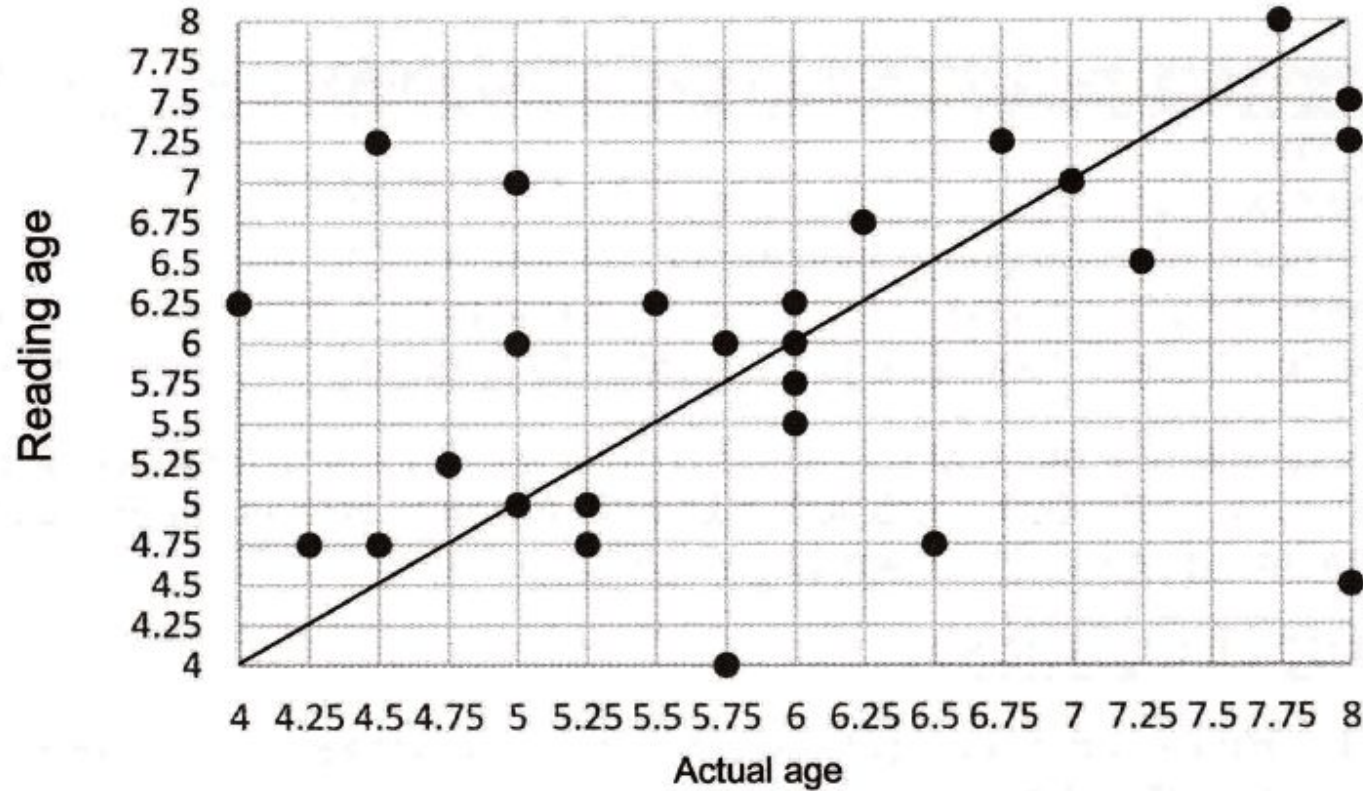
The following scatter chart shows the actual age and reading age of 26 pupils in a school. Each dot represents a specific child.





Q14)

The following scatter chart shows the actual age and reading age of 26 pupils in a school. Each dot represents a specific child.

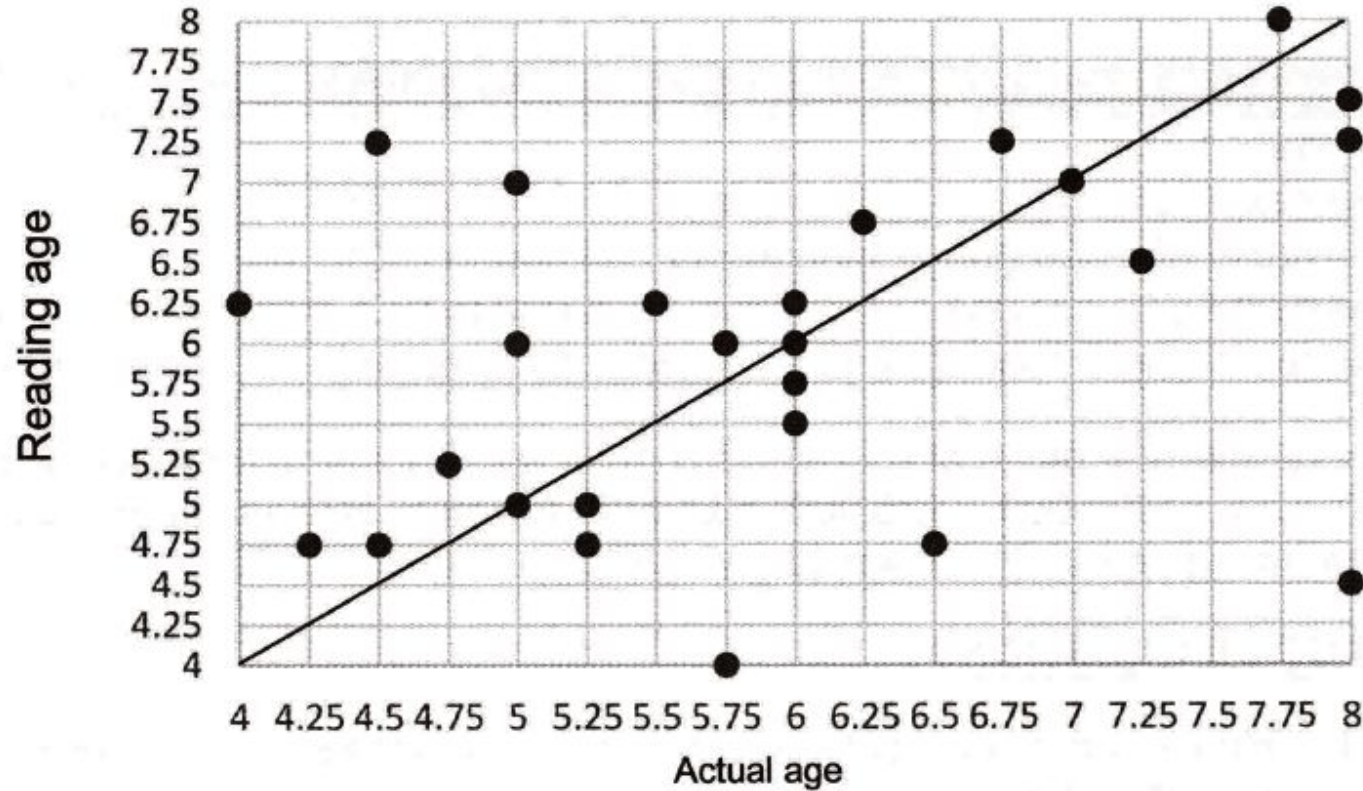


What proportion of the children have a reading age equal to or greater than their actual age?

- a. 5.5%      b. 11.5%      c. 21.5%      d. 41.5%      e. 61.5%

Q15)

The following scatter chart shows the actual age and reading age of 26 pupils in a school. Each dot represents a specific child.

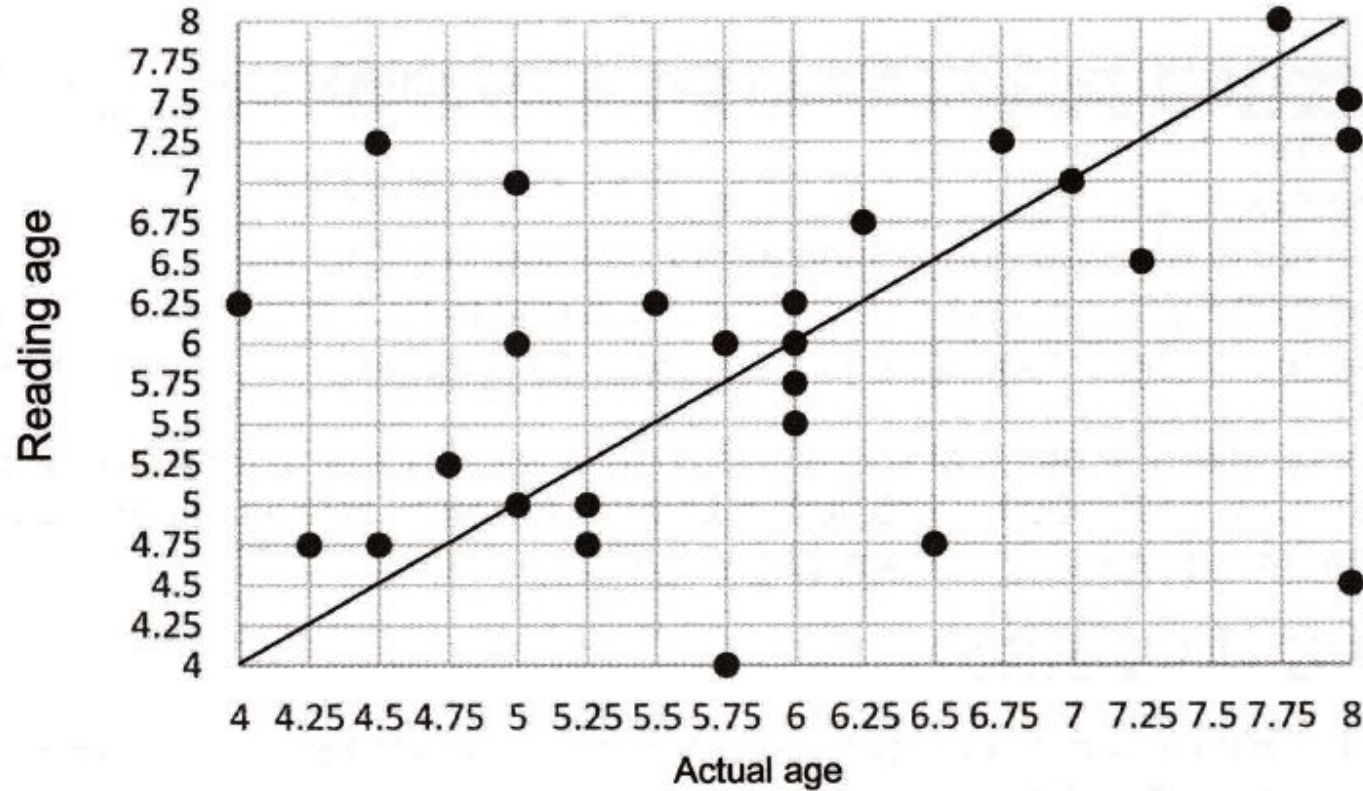


How many years behind is the worst performing pupil?

- a. 1.5      b. 2.0      c. 2.75      d. 3.0      e. 3.5

Q16)

The following scatter chart shows the actual age and reading age of 26 pupils in a school. Each dot represents a specific child.



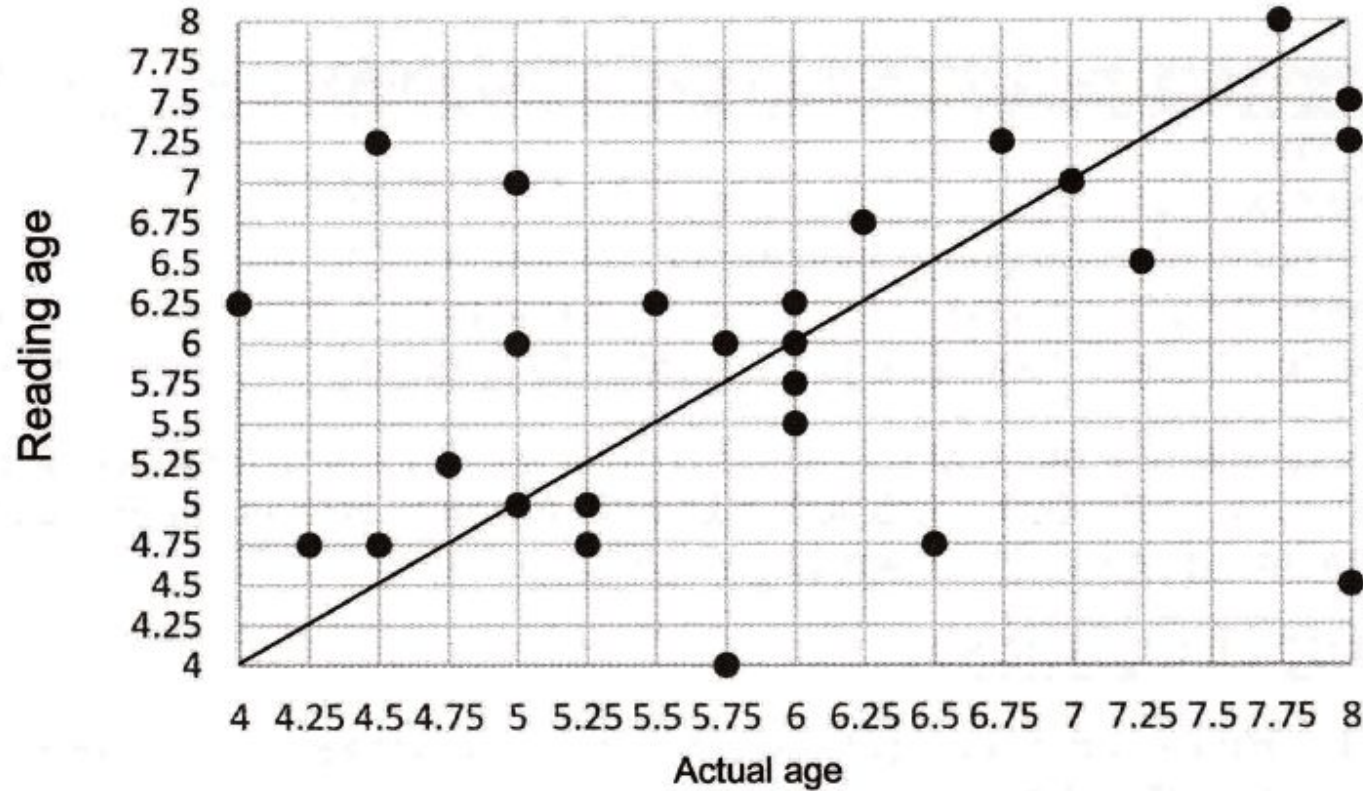
What is the average age of the pupils with a reading age of 6?

- a. 5      b. 5.375      c. 5.583      d. 5.75      e. 6



Q17)

The following scatter chart shows the actual age and reading age of 26 pupils in a school. Each dot represents a specific child.



The four children currently showing an actual age of 6 increase their reading age by 0.75 years in the following year. How many of those four children are underperforming at age 7?

a. 0

b. 1

c. 2

d. 3

e. 4

## Stamp Duty(Q18 to Q21)

In England, Stamp Duty (tax) is payable to the government by the buyer of a flat or house. A different rate applies to different parts of the purchase price, as follows:

Value	Tax rate
Up to £125,000	0%
The next £125,000 (the portion from £125,000 to £250,000)	2%
The next £675,000 (the portion from £250,000 to £925,000)	5%
The next £575,000 (the portion from £925,000 to £1.5 million)	10%
The remaining amount (the portion above £1.5 million)	12%

For example, the buyer of a £200,000 house will pay stamp duty calculated as:  $0 + 2\% \times (200,000 - 125,000) = £1,500$ . A similar calculation applied to a purchase price of £1.5m would give a stamp duty of £93,750.





Q18)

In England, Stamp Duty (tax) is payable to the government by the buyer of a flat or house. A different rate applies to different parts of the purchase price, as follows:

Value	Tax rate
Up to £125,000	0%
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The next £575,000 (the portion from £925,000 to £1.5 million)	10%
The remaining amount (the portion above £1.5 million)	12%

For example, the buyer of a £200,000 house will pay stamp duty calculated as:  $0 + 2\% \times (200,000 - 125,000) = £1,500$ . A similar calculation applied to a purchase price of £1.5m would give a stamp duty of £93,750.

How much stamp duty would someone purchasing a property for £1 million have to pay?

a. £2,500    b. £7,500    c. £33,750    d. £43,750    e. £100,000





Q19)

In England, Stamp Duty (tax) is payable to the government by the buyer of a flat or house. A different rate applies to different parts of the purchase price, as follows:

Value	Tax rate
Up to £125,000	0%
The next £125,000 (the portion from £125,000 to £250,000)	2%
The next £675,000 (the portion from £250,000 to £925,000)	5%
The next £575,000 (the portion from £925,000 to £1.5 million)	10%
The remaining amount (the portion above £1.5 million)	12%

For example, the buyer of a £200,000 house will pay stamp duty calculated as:  $0 + 2\% \times (200,000 - 125,000) = £1,500$ . A similar calculation applied to a purchase price of £1.5m would give a stamp duty of £93,750.

John bought a house worth over £1.5m. In total he paid £100,000 of stamp duty. How much did he pay approximately for the house?

a. £1.500m   b. £1.512m   c. £1.525m   d. £1.552m   e. £1.600m



Q20)

In England, Stamp Duty (tax) is payable to the government by the buyer of a flat or house. A different rate applies to different parts of the purchase price, as follows:

Value	Tax rate
Up to £125,000	0%
The next £125,000 (the portion from £125,000 to £250,000)	2%
The next £675,000 (the portion from £250,000 to £925,000)	5%
The next £575,000 (the portion from £925,000 to £1.5 million)	10%
The remaining amount (the portion above £1.5 million)	12%

For example, the buyer of a £200,000 house will pay stamp duty calculated as:  $0 + 2\% \times (200,000 - 125,000) = £1,500$ . A similar calculation applied to a purchase price of £1.5m would give a stamp duty of £93,750.

The government would like to introduce a 15% tax rate for the portion of the price over £2 million. How much more stamp duty would be payable on a £3 million mansion as a result?

a. £10,000   b. £30,000   c. £50,000   d. £70,000   e. £90,000





Q21)

In England, Stamp Duty (tax) is payable to the government by the buyer of a flat or house. A different rate applies to different parts of the purchase price, as follows:

Value	Tax rate
Up to £125,000	0%
The next £125,000 (the portion from £125,000 to £250,000)	2%
The next £675,000 (the portion from £250,000 to £925,000)	5%
The next £575,000 (the portion from £925,000 to £1.5 million)	10%
The remaining amount (the portion above £1.5 million)	12%

For example, the buyer of a £200,000 house will pay stamp duty calculated as:  $0 + 2\% \times (200,000 - 125,000) = £1,500$ . A similar calculation applied to a purchase price of £1.5m would give a stamp duty of £93,750.

Denise has saved up a total of £250,000 and refuses to borrow any money to buy a property. She will therefore need to pay the purchase price of the property and the stamp duty out of that budget. What maximum price can she afford for the property?

a. £242,135   b. £245,000   c. £245,098   d. £247,500   e. £247,549





## Distance & Journey Times(Q22 to Q31)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

Q22)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

Tom needs to drive from Paris to Madrid. He expects to drive at an average speed of 90 km/hour. How long will his journey take?

**a. 8h40min b. 10h30min c. 12h10min d. 13h00min e. 14h00min**



Q23)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

Paul wants to go from Geneva to Amsterdam. He drives at an average speed of 110 km/hour. Every time he has driven two hours, he takes a break of 20 minutes. How long will his journey last?

**a. 9h00min   b. 9h20min   c. 9h40min   d. 10h20min   e. 10h40min**





Q24)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

Tracy wants to go from Rome to Brussels. How much further would it be to travel via Geneva compared to travelling direct?

- a. 4.97%      b. 5.07%      c. 5.23%      d. 6.07%      e. 7.23%



Q25)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

Suzie travelled from Geneva to Brussels. Her car uses 9 litres (L) of petrol per 100 km. If petrol costs £1.30/L and the toll fees amount to £30 for the journey, what was the cost of the journey?

- a. £41.70    b. £61.20    c. £79.56    d. £91.20    e. £109.56



Q26)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

Peter travelled from Paris to Amsterdam. He drove at an average speed of 100 km/h for the first 2h36min and then at an average speed of 90 km/h for the remaining 2h40min. What is the distance between Paris and Amsterdam?

- a. 452 km    b. 500 km    c. 512 km    d. 552 km    e. 570 km**





Q27)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

David travels from Madrid to Barcelona. He drives the first 430 km in 2h40min. The rest of the distance takes him 5 hours because of roadworks. What was his average speed over the whole journey?

- a. 38 km/h    b. 57 km/h    c. 81 km/h    d. 90 km/h    e. 92 km/h



Q28)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

Rob travels from Barcelona to Brussels via another town "X". The total length of his journey is 1490 km. What town is "X"?

a. Amsterdam   b. Geneva   c. Madrid   d. Paris   e. Rome



Q29)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

John travelled from Paris to Brussels. He drove the first half of the journey in 1h30min, stopped for a break and then drove the second half of the journey at a speed of 50 km/h. In total his journey lasted 5 hours. How long did he stop for?

- a. 15 min    b. 20 min    c. 30 min    d. 45 min    e. 50 min





Q30)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

Julia drives at an average speed of 60 miles/hour between Rome and Madrid. How long will it take her to cover the distance (to the nearest 10 minutes)? (Use 1 mile = 1.6 km.)

**a.21h00min b.21h10min c.27h20min d.27h40min e.33h40min**



Q31)

Here is a table showing distances in kilometres (km) between some European cities.

	Amsterdam	Barcelona	Brussels	Geneva	Madrid	Paris	Rome
Amsterdam		1530	200	990	1770	-----	1740
Barcelona	1530		1340	810	620	1030	1470
Brussels	200	1340		680	1570	300	1530
Geneva	990	810	680		1360	500	930
Madrid	1770	620	1570	1360		1260	2020
Paris	-----	1030	300	500	1260		1430
Rome	1740	1470	1530	930	2020	1430	

An Englishman mistakenly thinks that the distances shown in the table are expressed in miles instead of kilometres. He thinks that the journey from Brussels to Geneva should take him 10 hours. How much shorter or longer will his actual journey be? Assume 1 mile = 1.6 km.

- a. 3h45 min shorter
- b. 1h20 min shorter
- c. 0h45 min shorter
- d. 1h20 min longer
- e. 3h45 min longer



# Q.R 2

White Goods	
Q. no.	Answer
1	d
2	c
3	d
4	c
5	d
6	a
7	a
8	d

Field Areas	
Q. no.	Answer
9	a
10	b
11	a
12	e
13	c

Actual Vs Reading Age	
Q. no.	Answer
14	e
15	e
16	c
17	d

Stamp Duty	
Q. no.	Answer
18	d
19	d
20	b
21	e

Distance & Journey Times			
Q. no.	Answer	Q. no.	Answer
22	e	27	c
23	d	28	b
24	c	29	c
25	e	30	a
26	b	31	a





# Home Assignment

<b>1250 UCAT Practice Question Book: Quantitative Reasoning Practice</b>	
Set 5	Restaurant Pricing
Set 7	Sightseeing
Set 10	Going Swimmingly
Set 12	New Employees
Set 13	Riding Lessons



*Thank you*