

Thursday 1 June 2017

Multiple-choice question book

Mathematics B



Queensland
Government



Queensland Curriculum
& Assessment Authority

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Section C

Instructions

- Do not circle your answers in this book.
 - Answer all questions in the question and response book.
 - Any planning required to complete the questions in Section C may be completed on the planning paper supplied. This planning paper will not be marked.
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QUESTION 1

Convert 100° into radians.

- (A) $\frac{5\pi}{9}$
- (B) $\frac{5\pi}{18}$
- (C) $\frac{10\pi}{9}$
- (D) 3.6π

[1 mark]

QUESTION 2

A function is defined by $f(x) = x^2 - 2x + 5$. The value of $f\left(-\frac{1}{2}\right)$ is

- (A) $4\frac{1}{4}$
- (B) $5\frac{1}{4}$
- (C) $5\frac{3}{4}$
- (D) $6\frac{1}{4}$

[1 mark]

QUESTION 3

Which of the variables described in these situations are discrete?

| | |
|------|--|
| i. | The speed of a car as it moves through a city |
| ii. | $y = x^2$ where $x \in \{0, 1, 2, 3, 4\}$ |
| iii. | The number of people in the queue at a busy restaurant |
| iv. | $y = 2x + 5$ where $-3 \leq x \leq 3$ |

- (A) i and ii
- (B) ii and iii
- (C) ii and iv
- (D) iii and iv

[1 mark]

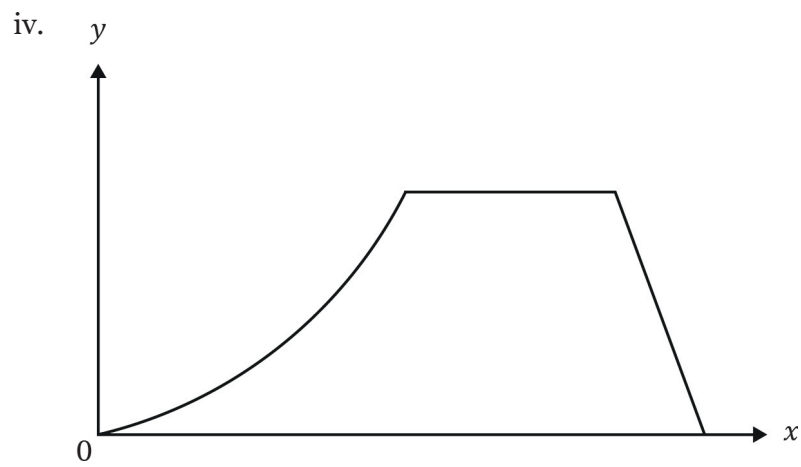
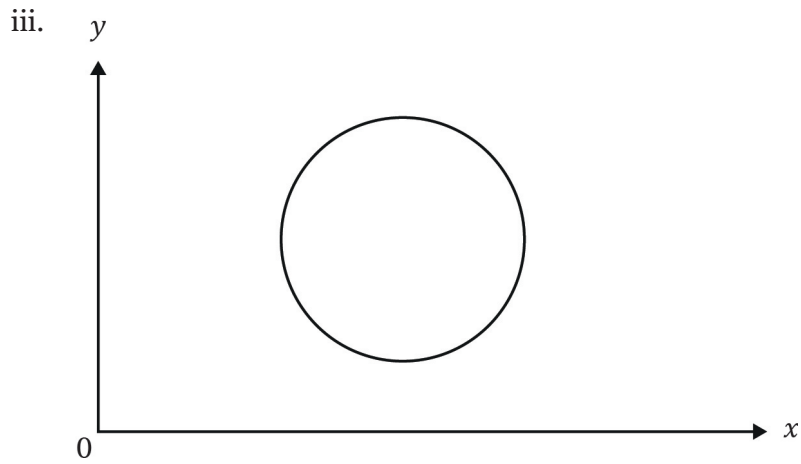
QUESTION 4

Which of the relations described below are functions?

i. $\{(4,-2), (1,-1), (0,0), (1,1), (4,2)\}$

ii.

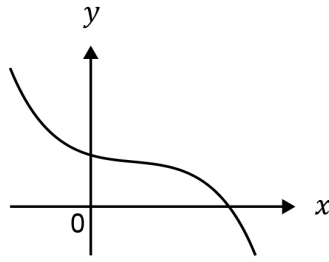
| | | | | | | |
|-----|----|----|---|---|---|----|
| x | -2 | -1 | 0 | 1 | 2 | 3 |
| y | -8 | -1 | 0 | 1 | 8 | 27 |



- (A) i and ii
- (B) ii and iii
- (C) ii and iv
- (D) iii and iv

[1 mark]

QUESTION 5



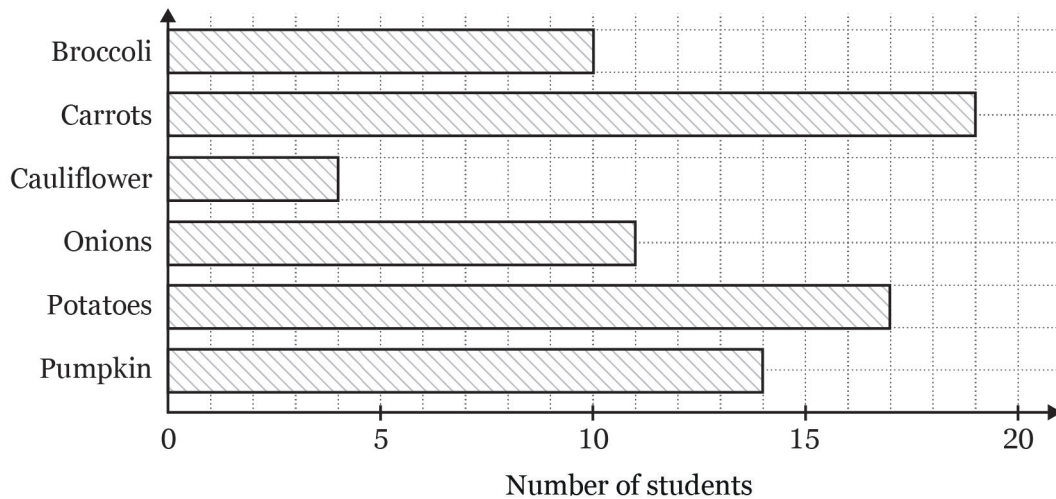
What type of function could have a graph with the shape shown above?

- (A) Cubic
- (B) Linear
- (C) Cosine
- (D) Quadratic

[1 mark]

QUESTION 6

75 students were asked to choose their favourite vegetable. The following bar chart shows the results.



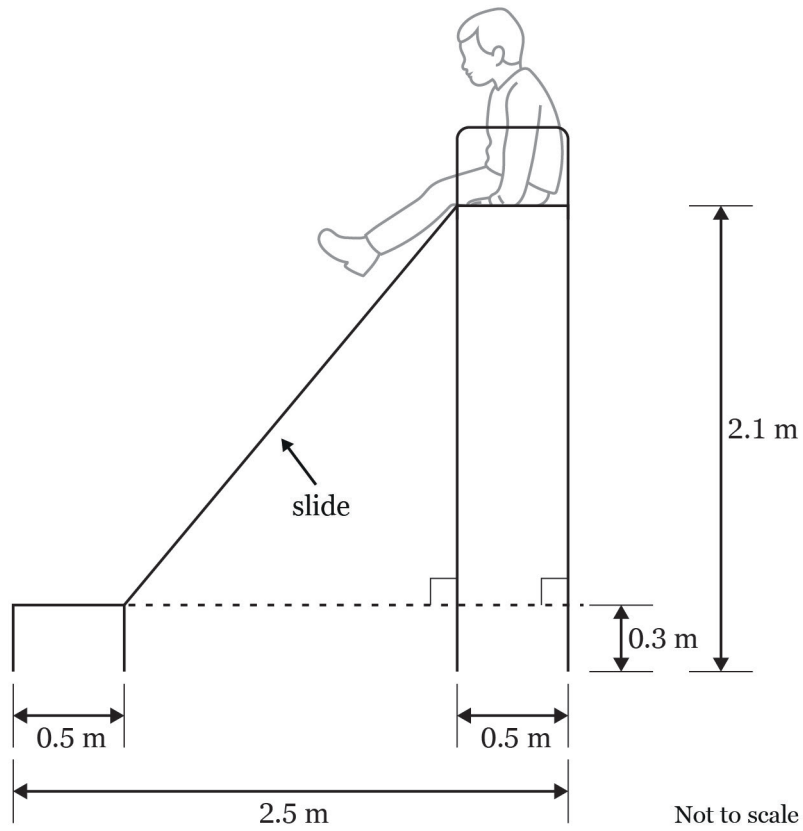
According to the bar chart, what was the approximate percentage of students who chose onions as their favourite vegetable?

- (A) 10%
- (B) 12%
- (C) 15%
- (D) 17%

[1 mark]

QUESTION 7

A piece of playground equipment has the dimensions shown on the diagram below.



What is the gradient of the line that forms the 'slide'?

- (A) $\frac{1.8}{1.5}$
- (B) $\frac{1.8}{2.5}$
- (C) $\frac{1.5}{1.8}$
- (D) $\frac{2.1}{1.5}$

[1 mark]

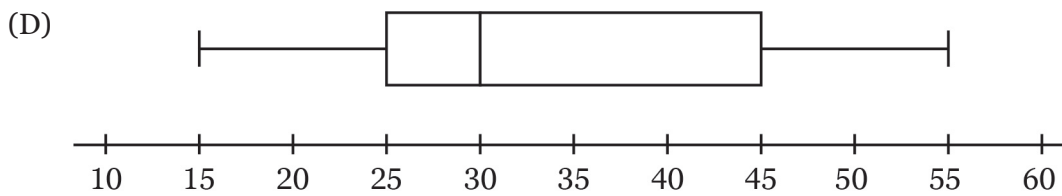
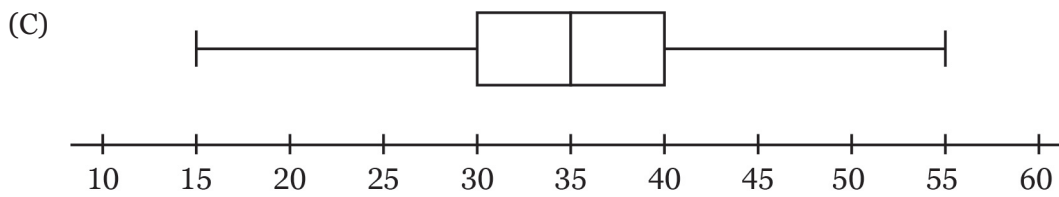
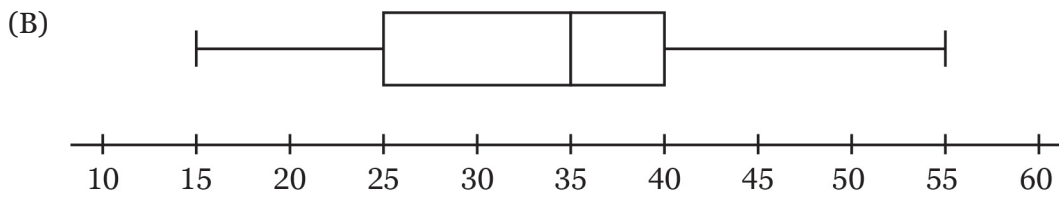
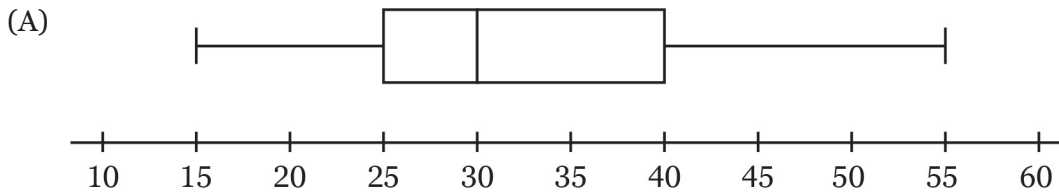
QUESTION 8

The stem-and-leaf plot shows the ages of the actors in a play.

| Stem | Leaf |
|------|-------|
| 1 | 5 |
| 2 | 4 6 8 |
| 3 | 0 5 8 |
| 4 | 2 |
| 5 | 5 |

where 3|5 represents 35 years

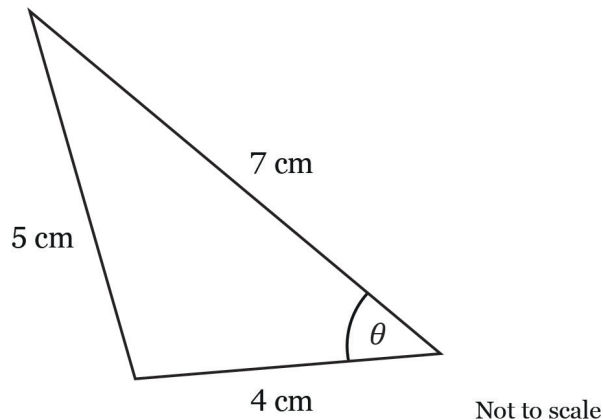
Which one of the boxplots (box-and-whisker plots) below matches this data?



[1 mark]

QUESTION 9

The lengths of the sides of a triangle are 4 cm, 5 cm and 7 cm as shown below.



The cosine of angle θ could be found using

- (A) $\cos \theta = \frac{5^2 - 4^2 - 7^2}{2 \times 4 \times 7}$
- (B) $\cos \theta = \frac{4^2 + 7^2 - 5^2}{2 \times 4 \times 7}$
- (C) $\cos \theta = \frac{4^2 + 5^2 - 7^2}{2 \times 4 \times 7}$
- (D) $\cos \theta = \frac{5^2 + 7^2 - 4^2}{2 \times 4 \times 7}$

[1 mark]

QUESTION 10

The number of goals scored by a player in the first 5 games of the season are given here

10, 12, 9, 14, 7

How many goals would need to be scored in the next game to obtain a mean of 11 goals per game?

- (A) 11
- (B) 12
- (C) 14
- (D) 16

[1 mark]

END OF MULTIPLE-CHOICE QUESTIONS

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