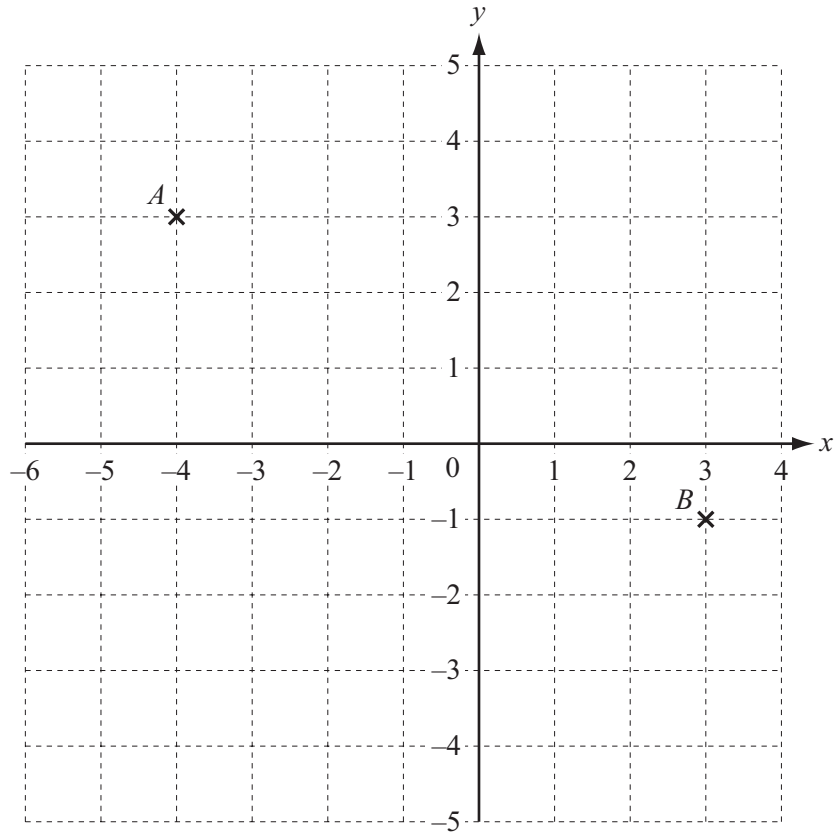


1



Points A and B are shown on the grid.

Write \vec{AB} as a column vector.

Answer $\begin{pmatrix} \\ \end{pmatrix}$ [1]

2 Write 15.0782 correct to

(a) one decimal place,

Answer(a) [1]

(b) the nearest 10.

Answer(b) [1]

3

ZEBRA

Write down the letters in the word above that have

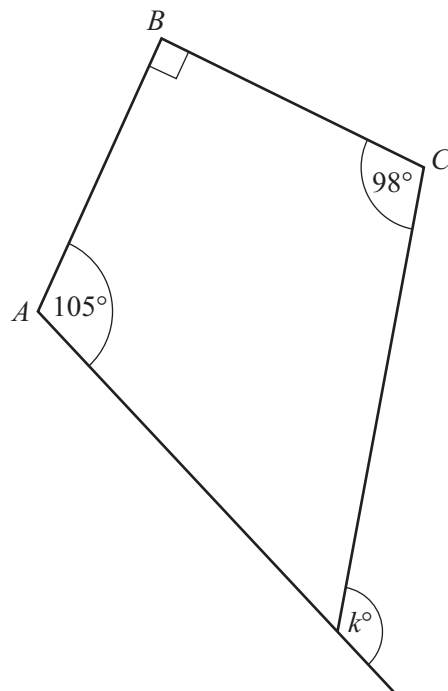
(a) exactly one line of symmetry,

Answer(a) [1]

(b) rotational symmetry of order 2.

Answer(b) [1]

4



NOT TO
SCALE

In the diagram, all four lines are straight.
Angle $A = 105^\circ$, angle $B = 90^\circ$ and angle $C = 98^\circ$.

Find the value of k .

Answer $k =$ [2]

- 5 These are the heights, correct to the nearest centimetre, of 12 children.

132 114 151 130 132 145 163 142 153 170 132 125

Find the median height.

Answer cm [2]

- 6 Write the following in order of size, smallest first.

π 3.14 $\frac{22}{7}$ 3.142 3

Answer < < < < [2]
smallest

- 7 Without using a calculator, work out $\frac{1}{4} + \frac{1}{6}$.

Write down all the steps in your working and give your answer as a fraction in its simplest form.

Answer [2]

8 Factorise completely.

$$8w^2x - 12wy$$

Answer [2]

9 A cylinder has radius 3.6 cm and height 16 cm.

Calculate the volume of the cylinder.

Answer cm³ [2]

10 Cheryl recorded the midday temperatures in Seoul for one week in January.

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Temperature (°C)	-4	-5	-3	-11	-8	-3	-1

(a) Write down the mode.

Answer(a) °C [1]

(b) On how many days was the temperature lower than the mode?

Answer(b) [1]

11 Simplify.

$$10x - 15 - 6x + 8$$

Answer [2]

12 (a) Write down a 2-digit odd number that is a factor of 182.

Answer(a) [1]

(b) Find all the prime factors of 182.

Answer(b) [2]

13 (a) Write 2.8×10^2 as an ordinary number.

Answer(a) [1]

(b) Work out $2.5 \times 10^8 \times 2 \times 10^{-2}$.
Give your answer in standard form.

Answer(b) [2]

14 To hire a bicycle it costs \$6 for each day, plus a fixed charge of \$15.

(a) Maria pays \$39 to hire a bicycle.

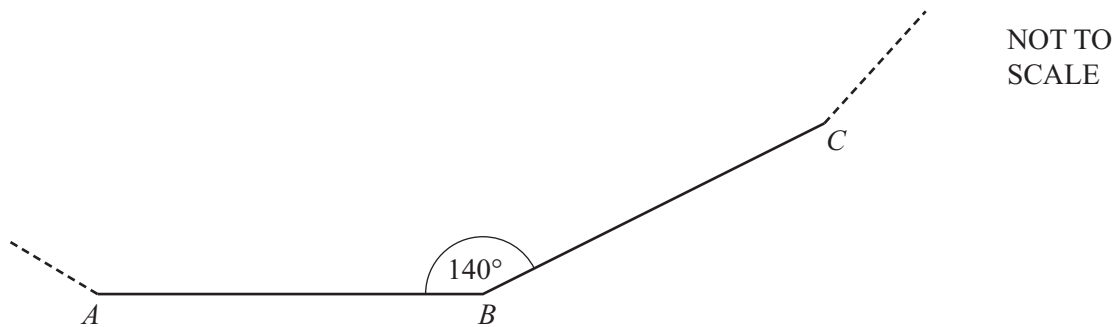
How many days does she hire it for?

Answer(a) days [2]

(b) Write down a formula for the cost, C dollars, to hire a bicycle for d days.

Answer(b) $C =$ [1]

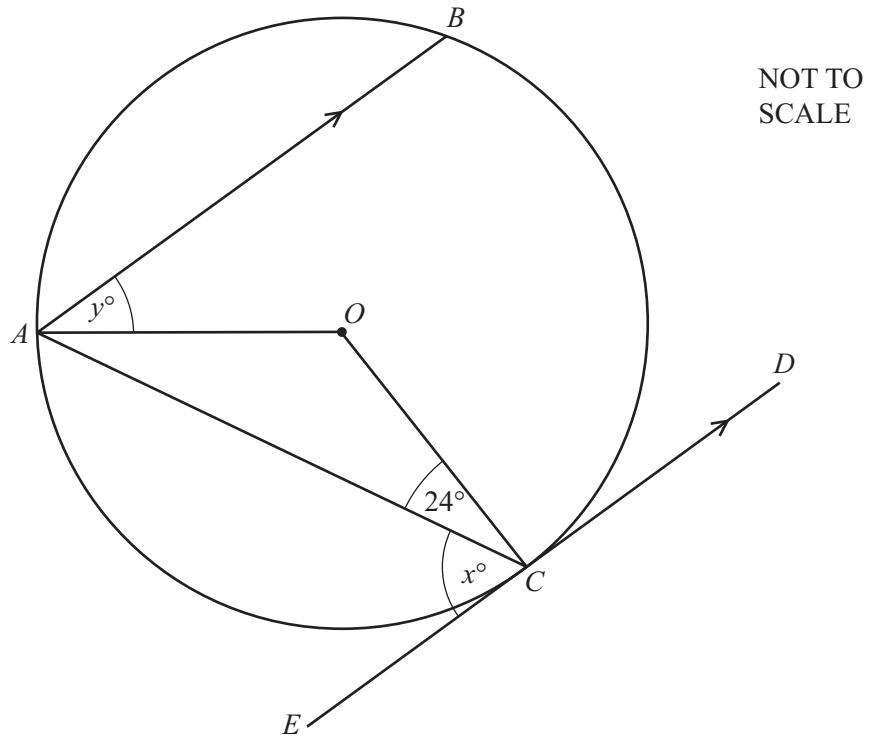
15



The diagram shows two sides, AB and BC , of a regular polygon.
Angle $ABC = 140^\circ$.

Find the number of sides of this regular polygon.

Answer [3]



The diagram shows a circle with centre O .
 ED is a tangent to the circle at C .
 AB is parallel to ED and angle $ACO = 24^\circ$.

Find the value of

(a) x ,

Answer(a) $x = \dots\dots\dots$ [1]

(b) y .

Answer(b) $y = \dots\dots\dots$ [2]

17 Dominic invests \$850 at a rate of 3.5% per year compound interest.

Calculate the **total** amount he has after 3 years.

Answer \$..... [3]

18 On a ship, the price of a gift is 24 euros (€) or \$30.

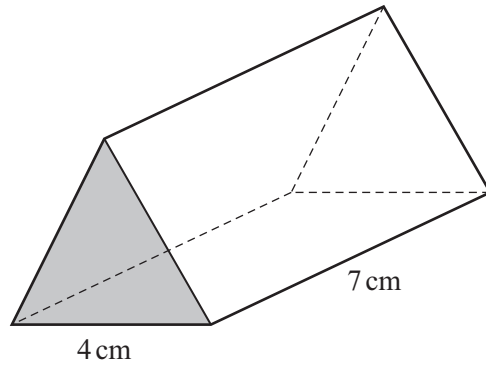
What is the difference in the price on a day when the exchange rate is €1 = \$1.2378?

Give your answer in dollars, correct to the nearest cent.

Answer \$..... [3]

19

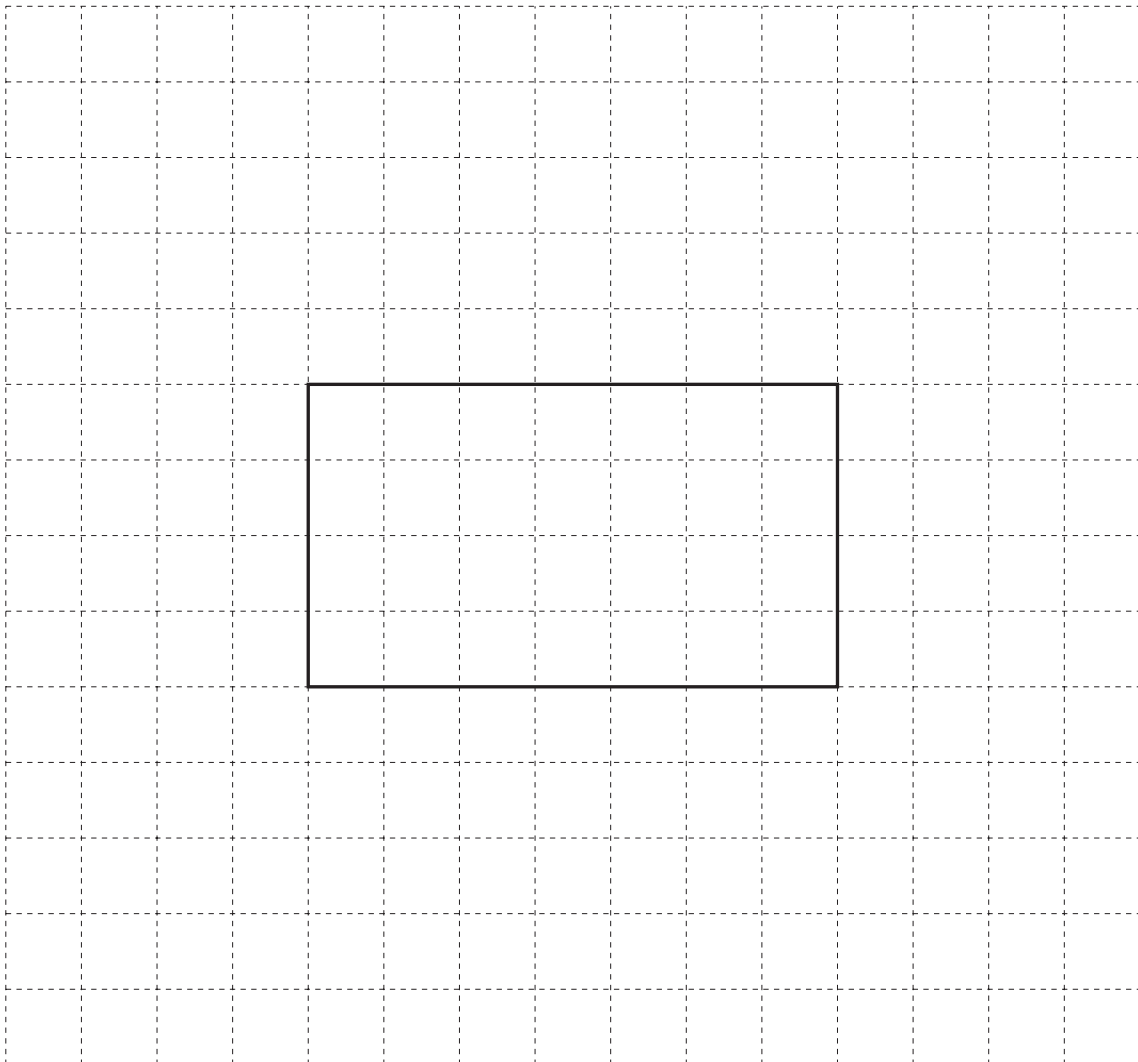
10



NOT TO
SCALE

The diagram shows a prism.
The cross section is an equilateral triangle.

On the grid, draw an accurate net of the prism.
The base is drawn for you.



[3]

20 Solve the simultaneous equations.

$$5x + 2y = 16$$

$$3x - 4y = 7$$

Answer $x =$

$y =$ [3]

21 (a) Find the value of $5x^2$ when $x = -4$.

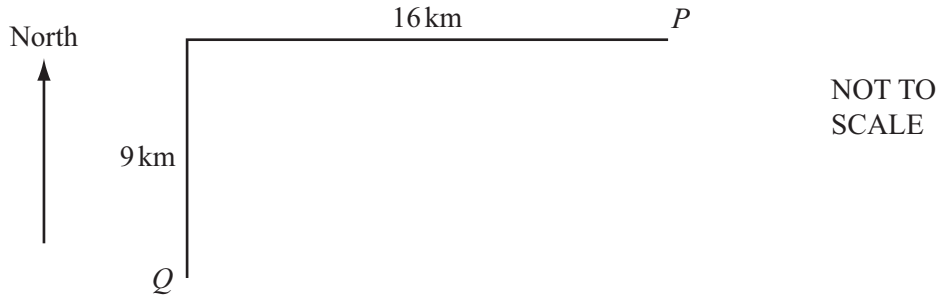
Answer(a) [2]

(b) Make x the subject of the formula $y = 5x^2$.

Answer(b) $x =$ [2]

Question 22 is printed on the next page.

22



The diagram shows the route of a ship that leaves a port, P .
It travels due west for 16 km and then changes course to due south for 9 km.

(a) Calculate the straight line distance PQ .

Answer(a) $PQ = \dots\dots\dots$ km [2]

(b) Use trigonometry to calculate the bearing of P from Q .

Answer(b) $\dots\dots\dots$ [2]

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