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18 (a) Make a the subject of the formula $M = ac - bd$

.....
(2)

(b) Solve the inequality $5x - 4 < 39$

.....
(2)

(c) Factorise fully $18e^2f^3 - 12e^3f$

.....
(2)

(Total for Question 18 is 6 marks)



19 The diagram shows two cylinders, A and B.

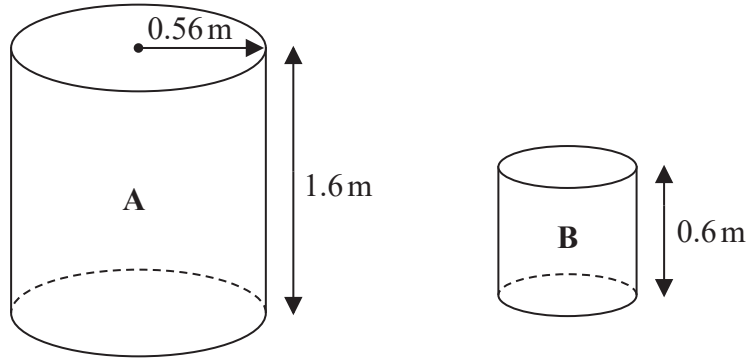


Diagram NOT accurately drawn

Cylinder A has height 1.6 m and radius 0.56 m.

- (a) Work out the curved surface area of cylinder A.
Give your answer in m^2 correct to 3 significant figures.

..... m^2
(2)

Cylinder B is mathematically similar to cylinder A.
The height of cylinder B is 0.6 m.

- (b) Work out the radius of cylinder B.

..... m
(2)

(Total for Question 19 is 4 marks)



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20 Show that $3\frac{4}{7} - 1\frac{5}{8} = 1\frac{53}{56}$

(Total for Question 20 is 3 marks)



21

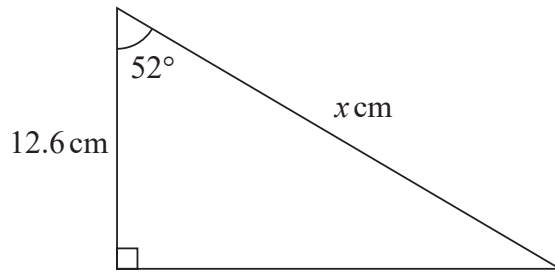


Diagram **NOT** accurately drawn

Work out the value of x .
Give your answer correct to 3 significant figures.

$x = \dots\dots\dots$

(Total for Question 21 is 3 marks)

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22 The students in Class A and in Class B take the same examination.

There are 28 students in Class A and 32 students in Class B.
The mean score for all the students in both classes is 72.6
The mean score for the students in Class A is 75

(a) Work out the mean score for the students in Class B.

.....
(4)

The lowest score in Class A is 39
The range of scores for Class A is 57
The lowest score in Class B is 33
The range of scores for Class B is 60

(b) Find the range of scores for all the students in both classes.

.....
(3)

(Total for Question 22 is 7 marks)



23 Solve the simultaneous equations

$$\begin{aligned}x + y &= 15 \\7x - 5y &= 3\end{aligned}$$

Show clear algebraic working.

$x =$

$y =$

(Total for Question 23 is 3 marks)

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24 $\frac{8}{2^7} = 2^n$

(a) Find the value of n .

$n = \dots\dots\dots$
(2)

$(13^{-6})^4 \times 13^5 = 13^k$

(b) Find the value of k .

$k = \dots\dots\dots$
(2)

(Total for Question 24 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

