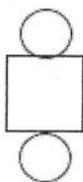


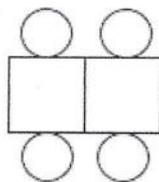
**FOUNDATION TIER
MINI PRACTICE EXAM 5**

**CALCULATOR ALLOWED
20 MINUTES ALLOWED**

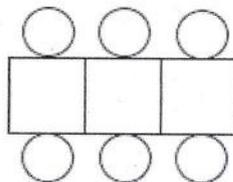
1.
Pictured below is a sequence of patterns, made of circles and squares.



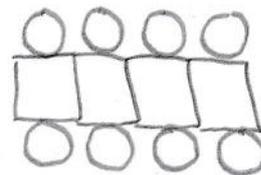
Pattern 1



Pattern 2



Pattern 3



Pattern 4

(a) Draw Pattern 4.

(1)

(b) How many circles are there in Pattern 12?

24

(1)

(c) Victor says "Pattern 21 has an odd number of circles".
Is he right? Explain your answer.

No. No pattern has an odd number of circles.
They are always even.

(1)

2.

(a) Simplify $12k - 3j + 2k - 6j$

$$14k - 9j$$

(2)

(b) Simplify $4m^4 \times 6m$

$$24m^5$$

(1)

3.

Wes is going to invest £2,000 into a savings account with 3% compound interest per annum.

How much money will Wes have in his account after 5 years?

$$2000 \times 1.03^5 = \underline{\underline{£2,318.55}}$$

(3)

4.

Will is shopping for a printer.

He sees two adverts from two different stores selling the same printer.

<p>Print Perfect</p> <p>Printers £115</p> <p>+ 20% VAT</p>

<p>Tech Giant</p> <p>Printers £155</p> <p>Sale: 15% discount</p>

Which shop sells the printer the cheapest?

Show all your working.

$$\begin{aligned} \text{Print Perfect: } 20\% \text{ of } 115 &= 23 \\ 115 + 23 &= \text{£}138 \end{aligned}$$

$$\begin{aligned} \text{Tech Giant: } 15\% \text{ of } 155 &= 23.25 \\ 155 - 23.25 &= \text{£}131.75 \end{aligned}$$

Tech Giant

(4)

5.

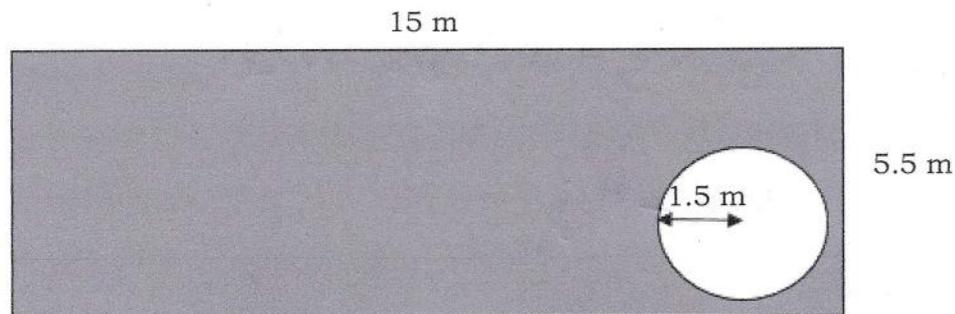
Yasmin is planning to put turf in her garden.

Below is a diagram of her garden.

She wants to cover the shaded region of the diagram with turf.

Turf costs £1.60 per m².

(a) Yasmin has a budget of £110. Has she budgeted enough?



$$\text{Area of rectangle} = 15 \times 5.5 = 82.5 \text{ m}^2$$

$$\text{Area of circle} = \pi \times 1.5^2 = 7.0685 \dots \text{ m}^2$$

$$\text{Area of shaded region} = 82.5 - 7.0685 \dots = 75.43 \text{ m}^2$$

$$75.43 \times 1.60 = \text{£}121.60$$

No

(5)

(b) Yasmin also wants to put fence around the whole garden.

She has 42 metres of fence.

Does she have enough fence?

$$\text{Perimeter} = 15 + 15 + 5.5 + 5.5 = 41 \text{ m}$$

Yes

(2)