Below are your tasks for the next seven days in the subject listed above.

**Optional** Hegarty Maths clips to recap for prior knowledge:
- Hegarty Maths Clip number 554 – Rectangle
- Hegarty Maths Clip number 557 – Triangle (1)

**Review & Reflect**
- The answers to last week’s work are on slide 2. Use your R&R pen to self-assess your work.

**Present New Information:**
- **All students** must watch all the following videos and make concise notes in a notebook:
  - Hegarty Maths Clip number 584 – Surface area of cuboids (9 minutes).
  - Hegarty Maths Clip number 585 – Surface area of Prisms (11 minutes).
  - Hegarty Maths Clip number 568 – Cuboids (1) (11 minutes)
  - Hegarty Maths Clip number 570 – Prisms (1) (8 minutes)

**Apply:**
- Complete Hegarty Maths Clip number 584 – Surface area of cuboids (18 minutes).
- Complete Hegarty Maths Clip number 585 – Surface area of Prisms (11 minutes).
- Complete Hegarty Maths Clip number 568 – Cuboids (1) (9 minutes)
- Complete Hegarty Maths Clip number 570 – Prisms (1) (8 minutes)
- Please note: Mr. Albon and Mr. Sahota will be checking that you have accessed the videos and completed these tasks set on Hegarty Maths.
- If you feel you need further practice then complete the tasks on slide 3 and mark your work with the answers provided to you for next week (15 minutes).
- Challenge: If you wish to challenge yourself then have an attempt at quiz numbers 586, 572, 573.

**Loom videos:**
- Hegarty Maths update: [https://www.loom.com/share/22ed60e7548b4481a0ee73420620bfeb.](https://www.loom.com/share/22ed60e7548b4481a0ee73420620bfeb)
- Surface Area and Volume: [https://www.loom.com/share/7a5c72c0c7a04021935674b079247558.](https://www.loom.com/share/7a5c72c0c7a04021935674b079247558)
**LAST WEEK’S ANSWERS**

**Question 1**
Area of the Trapezium: \( \frac{9+4}{2} \times 7 = 45.5 \text{cm}^2 \)

**Question 2**
Area of Rectangle: \( (15 \times 8) = 120 \text{cm}^2 \)
Area of a Trapezium: \( \left( \frac{5+2}{2} \times 6 \right) = 21 \text{cm}^2 \)
Area of a triangle: \( \left( \frac{6 \times 6}{2} \right) = 18 \text{cm}^2 \)
Shaded area = 120 – 21 – 18 = 81 cm²

**Question 3**
\[ \frac{6(x+4)}{2} = 33 \]
\[ 3(x + 4) = 33 \]
\[ x + 4 = 11 \]
\[ x = 7 \]

**Question 4**
Area of a Trapezium: \( \left( \frac{12+6}{2} \times 6 \right) = 54 \text{cm}^2 \)
Area of a Triangle: \( \left( \frac{12 \times 9}{2} \right) = 54 \text{cm}^2 \)
Total Area = 108 cm²

**Question 5**
Area of the Rectangle: \( 8 \times 4 = 32 \text{cm}^2 \)
Semi circle: \( \frac{\pi r^2}{2} = \frac{\pi (4^2)}{2} = \frac{16\pi}{2} = 8\pi = 25.1327 \text{cm}^2 \)
Shaded area: 32 – 25.1327 = 6.87 cm²

**Extension**
With one circle in the square the diameter is the length of one side of the square. The shaded area is \( \pi r^2 \) where \( r \) = radius of the largest circle.

With four circles in the square, the diameter of one circle is half that of the large circle. The area of each small circle is \( \pi \left( \frac{r}{2} \times \frac{r}{2} \right) \). The total shaded area is \( 4 \left( \frac{\pi r^2}{4} \right) \). This can be simplified to \( \pi r^2 \). With nine circles in the square, the diameter of one circle is a third that of the large circle. The area of each small circle is \( \pi \left( \frac{r}{3} \times \frac{r}{3} \right) \). The total shaded area is \( 9 \left( \frac{\pi r^2}{9} \right) \). This can be simplified to \( \pi r^2 \).

We can go one step further by saying that with \( n \) circles the area is \( \pi \left( \frac{r^2}{n} \right) \) - which can again be simplified to \( \pi r^2 \). Therefore the answer is that the shaded area is the same in each picture.
Extra questions

Calculate the surface area and volume for each shape.

1)

2)

3)

4)

5)

6)
Question 1
SA = 96m²
V = 64m³

Question 2
SA = 294m²
V = 343m³

Question 3
SA = 118cm²
V = 70cm³

Question 4
SA = 164m²
V = 120cm³

Question 5
SA = 336cm²
V = 288cm³

Question 6
SA = 84cm²
V = 48cm³