Year 8 Circles, Area and Volume – Challenge

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Year 8 · Maths · Circles, Area and Volume · Level 3 Challenge · 8 questions

Name _____ **Date** _____

A. Think like a mathematician

1. An octagonal prism has 16 vertices and 24 edges. Amir uses V + E + F = 2 and gets F = -38. Explain the mistake and find F.

Answer _____

2. A circle has radius 12 cm. Amir works out its circumference as 3.14 × 12 = 37.68 cm. Explain the mistake and find the circumference.

Answer _____

3. A hexagonal pyramid has 7 vertices and 12 edges. Farah uses V + E + F = 2 and gets F = -17. Explain the mistake and find F.

Answer _____

4. Eli says π is exactly 3.14. Is Eli right? Explain.

Answer _____

5. Lina says the area of a parallelogram is base × sloping side. Is Lina right? Explain.

Answer _____

6. Dina says Euler's formula V − E + F = 2 works for a cube. Is Dina right? Explain.

Answer _____

7. A triangular prism is 6 cm long. Its ends are right-angled triangles with sides 8 cm, 6 cm and 10 cm. Find its total surface area.

Answer _____

8. A triangular prism is 6 cm long. Its triangular end has a base of 12 cm and a perpendicular height of 9 cm. Find its volume.

Answer _____