



---

QUESTION WORKBOOK

# Conic sections

Further Pure 1 · Year FM

6 questions · 20 marks

NAVY SCREEN EDITION

**SECTION A** · Warm-up

- A1** Write down parametric coordinates for a general point on the parabola  $y^2 = 4ax$  and on the rectangular hyperbola  $xy = c^2$ . [2]

---

---

---

- A2** For the parabola  $y^2 = 20x$ , state  $a$ , the focus and the directrix. [3]

**SECTION B** · Standard

- B1** For the ellipse  $x^2/16 + y^2/7 = 1$ , find the eccentricity, the foci and the equations of the directrices. [4]

- B2** For the hyperbola  $x^2/16 - y^2/9 = 1$ , find the eccentricity and the foci, and state the difference of focal distances at the vertex  $(4, 0)$ . [4]

- B3** State the focus-directrix property of a conic, and explain how the eccentricity decides which of the three curves appears. [3]

### SECTION C · Stretch

- C1** The point  $P(16, 16)$  lies on the parabola  $y^2 = 16x$ . Verify that it does, and check the focus-directrix property at  $P$ . [4]