# Mathematics
# Credit Level 2001
# Paper 1 (Non-calculator)

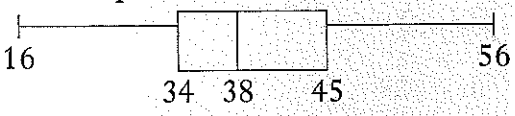
**1.** 13·5

**2.** $8\frac{7}{24}$

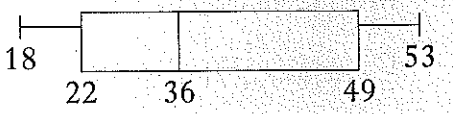
**3.** $f(-5) = (-5)^2 - 3(-5)$
$= 40$

**4.** $x = 3$

**5.** (*a*)
Timberplan




Allwoods




(*b*) **Timberplan**
Smaller Interquartile Range (or equivalent)

**6.** gradient $= \dfrac{\text{distance up}}{\text{distance along}}$

$= \dfrac{t-a}{t^2-a^2}$

$= \dfrac{1}{t+a}$

**7.** (*a*) $\dfrac{310}{600}$ or equivalent
(*b*) 70

**8.** (*a*) A (0,–3)
(*b*) B$(-\frac{3}{2},0)$ C$(\frac{1}{2},0)$
(*c*) $-4$

**9.** (*a*) $(7+1)(7^2-7+1)$
(*b*) $(n+1)(n^2-n+1)$
(*c*) $(2p+1)(4p^2-2p+1)$

**10.** $\dfrac{\sqrt{72}}{24}$ or $\dfrac{6\sqrt{2}}{24}$ or $\dfrac{\sqrt{2}}{4}$

**11.** (*a*) $I = \dfrac{20}{8}$
(*b*) $c = 1$
(*c*) $2^c$ is a Minimum
$2^c = 1$
$I = 20$

# Mathematics
# Credit Level 2001
# Paper 2

**1.** $5{\cdot}256 \times 10^9$

**2.** (*a*) Mean = 84·3
Standard deviation = 1·28
(*b*) Rural prices are higher on average, and
Rural prices have a greater spread

**3.** Total = £150 907·53

**4.** (*a*) gradient $= m = \dfrac{(6-2)}{12-0}$

$= \frac{1}{3}$

intercept $= c = 2$

$y = \frac{1}{3}x + 2$

$3y = x + 6$

(*b*) (6,4)

**5.** 7·3 centimetres

**6.** 157·8°

**7.** $x° = 184{\cdot}6°, 355{\cdot}4°$

**8.** 275·7 cm$^3$

**9.** $R = \dfrac{kL}{d^2}$; 6·75 millimetres

**10.** (*a*) 107·5°
(*b*) 66·8 cm

**11.** (*a*) $30 + x$
(*b*) $A = (30 + x)(20 + x)$
$= 600 + 30x + 20x + x^2$
$= 600 + 50x + x^2$
(*c*) Minimum dimensions are 35 cm and 25 cm