



Show all working – <u>NO</u> calculator allowed.



1. Simplify:

a)	$\sqrt{32}$	(b) $\sqrt{75}$	(c) $\sqrt{64}$	(d) $\sqrt{20}$
e)	$\sqrt{54}$	(f) $\sqrt{147}$	(g) $\sqrt{243}$	(h) $\sqrt{500}$

 Calculate the length of this square's side, given that its diagonal is 8cm long. Leave your answer in surd form.



3. Simplify fully: a) $\frac{x^2 \times x^8}{x^{-3}}$ (b) $\frac{x^4 \times x^6}{x^3}$ (c) $\frac{x^7 \times x^{-3}}{x^2}$ d) $6x^{\frac{1}{3}} \times 3x^{-2}$ (e) $2x^{\frac{1}{2}} \times 3x^{-3}$ (f) $5x^4 \times 4x^{-\frac{5}{2}}$

End of Non-Calculator Section



Show all working – Calculator allowed.



- 4. Give the answers to the following in Scientific Notation:
 - a) The number of people attending a football match was $3 \cdot 12 \times 10^4$. If each person paid £27, how much was collected?
 - b) The number of people attending a musical was 2.64×10^3 . If each person paid £34, how much was collected.
 - c) A factory produces $2 \cdot 4 \times 10^4$ cakes every day. How many cakes will it produce in the month of April?



- d) The total number of pupils attending Secondary School in Scotland is 3.89 × 10⁵.
 If there are 364 Secondary Schools in Scotland, on average how many pupils attend each school?
- 5. Calculate the Areas of these Triangles:





