1.

(a) Find the value of

(i) $\left(\dfrac{1}{4}\right)^{0.5}$,

Answer(a)(i) .... [1]

(ii) $(-8)^{\frac{2}{3}}$.

Answer(a)(ii) .... [1]

MARK SCHEME 1:

(a) (i)	0.5 or -0.5 or $\dfrac{1}{2}$ or $-\dfrac{1}{2}$	**1**	
(ii)	4	**1**	
(b)	1.37 or 1.37[4…]	**1**	

2.

Simplify.

$$(36x^{16})^{\frac{1}{2}}$$

.... [2]

MARK SCHEME 2:

$6x^8$ final answer	2	**B1** for $6x^k$, $6 \times x^8$ or kx^8 ($k \neq 0$) as final answer

3.

Work out.

(a) $t^{24} \div t^4$

.... [1]

(b) $(x^5)^2$

.... [1]

(c) $(81m^8)^{\frac{3}{4}}$

.... [2]

MARK SCHEME: 3:

(a)	t^{20} final answer	**1**	
(b)	x^{10} final answer	**1**	
(c)	$27m^6$ final answer	**2**	**B1** for $27m^k$ or km^6 as final answer

4.

Work out, giving your answer in standard form.

$$1.2 \times 10^{40} + 1.2 \times 10^{41}$$

.... [2]

1.32×10^{41}		**2**	**M1** for 0.12×10^{41} or 12×10^{40} or **SC1** for figs 132

5.

Simplify.

(a) $81^{\frac{3}{4}}$

.... [1]

(b) $x^{\frac{2}{3}} \div x^{-\frac{4}{3}}$

.... [1]

(c) $\left(\dfrac{8}{y^6}\right)^{-\frac{1}{3}}$

.... [2]

MARK SCHEME 5:

a)	27	1	
b)	x^2 final answer	1	
c)	$\dfrac{y^2}{2}$ or $0.5y^2$ final answer	2	**M1** for $\left(\dfrac{y^6}{8}\right)^{\frac{1}{3}}$ or $\left(\dfrac{2}{y^2}\right)^{-1}$ or better or **SC1** for answer $\dfrac{y^2}{c}$ or $\dfrac{y^k}{2}$ or $\dfrac{2}{y^2}$