

M1.

(a) $375.112(1656)$

*Condone if correctly rounded to 7 significant figures or better
eg 375.1122*

B1

(b) 20^2 or 400 or $\sqrt[3]{1000}$ or 10
or 5

M1

$400 - 10 \div 5 = 398$ or
 $400 - 2 = 398$

A1

[3]

M2.

3^8

B1

[1]

M3.

(a) $(8^1 =) 8$ or $(8^0 =) 1$

M1

9

SC1 9^1

A1

Additional Guidance

$8^1 + 1$ with answer 9^1

M1A0

$8^1 + 0$ with answer 8^1

M0A0

8 on answer line without working

M0A0

$8^1 + 8^0$ with answer 8

M0A0

$8 \times 1 = 8$ and $8 \times 0 = 0$ with answer 8

M0A0

(b) 6^8

B1

(c) $15x^7y^5$

B1 two terms correct

B2

Additional Guidance

$8x^7y^5$

B1

$15x^6y^5$

B1

$15x^7 \times y^5$

B1

$8x^7 \times y^5$ or $15x^7 \times y^6$

B1

$15x^{12}y^6$

B0

$15x^7 + y^5$

B0

$8x^7 + y^5$

B0

[5]

M4.**Alternative method 1**

$(2^2)^4$ or $(2^3)^4$ or 2^{12}

M1

$2^{12} \div 2^8$ or 2^4 or $2^8 \times 2^4 = 2^{12}$

oe

M1

4

A1

Alternative method 2

256 or 4096

M1

$$4096 \div 256 = 16 \text{ and } 2^4 = 16$$

M1

4

A1

[3]

M5.(a) a^{25}

B1

(b) a^{15}

B1

[2]

M6.(a) a^{25}

B1

(b) a^{15}

B1

(c) a^{100}

B1

[3]

M7.(a) 1

B1

(b) $\frac{1}{5^3}$ or $\frac{1}{125}$ or $0.2 \times 0.2 \times 0.2$
 $\left(\frac{1}{5}\right)^3$ or 125^{-1} or 0.2^3

M1

0.008 or $\frac{8}{1000}$

A1

8×10^{-3}

ft Any decimal $0 < x < 1$ correctly converted to standard form

A1 ft

[4]

M8.(a) $6x^2 + 4x + 15x + 10$

Allow one sign or arithmetic error. Must see 4 terms including term in x^2 , 2 terms in x and a constant term

M1

$6x^2 + 19x + 10$

NB Answer only

$6x^2 + 19x + b$ implies M1

$ax^2 + 19x + 10$ implies M1

Do not award if incorrect further work

A1

(b) $9x^4y^8$

B1 for two of 9, x^4 or y^8

B1 maximum for any use of \times signs

B0 for any addition eg $9 + x^4 + y^8$

Deduct one mark for incorrect further work

B2

[4]

M9.(a) 18.3 or $\frac{183}{10}$

B1

(b) 8.36 or $\frac{836}{100}$ or $\frac{209}{25}$

B1

(c) 0.65 or $\frac{65}{100}$ or $\frac{13}{20}$

B1

[3]