Answers Sheet

Indices

1. **(a)** a^{5+4}

a^{9}

(b) c^{6+2}

C^{8}

(c) P^{8-2}

P^{6}

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2. **(a)** $4\times7\ d^{2+5}$

$28d^{7}$

(b) $m^{3\times2}$

m^{6}

(c) L^{5-3}

L^{2}

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3. **(a)** $8n^{4\times3}$

$8n^{12}$

(b) $16/8\ g^{4}w^{-6}$

$2g^{4} / w^{6}$

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4. **(a)** $2\times5\ m^{4+3}\ n^{3+8}$

$10m^{7}n^{11}$

(b) $27n^{4\times3}$

$27n^{12}$

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5. $(18/6)\ u^{3-1}\ v^{6-2}$

$3u^{2}v^{4}$

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6. **(a)** **1**

(b) **$1 / 3^{2}$**

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7. (a) $4^5 \times 2^{-2}$

8^{5-2} **= 8^3**

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8. (a) 343 – 25

318

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9. (a) $7 \times 3\ m^{5+2}\ n^{6+1}$

$21m^7n^7$

(b) **$64i^8$**

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10. (a) **a = -2**

(b) **$243m^{15}$**

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11. (a) $4^7 / 4^2$

$= 4^5$

(b) **1**

(c) **$1 / 4^2$**

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12. (a) $2^3 / 2^4$

$= 2^{-1}$ OR 1 /2

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13. (a) **8^4**

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14. (a) **m^8**

(b) **$16a^2b^6$**

(c) **$3m^2n$**

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15. (a) $(10^4)^4 = 10^x$

$10^{16} = 10^x$

x = 16

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16. (a) $3^5 / 3^3$

$= 3^2$

$= 9$

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17. **(a)** **1 / 9**

18. **(a)** **20p**

(b) **$36x^8y^6$**

(c) **$b^8 = b^{12} \times b^y$**

$y = -4$

19. **$x = 0$**

20. **8^4**

21. **$= 1 / 13$**

22. **(a)** **$10c^3d^3$**

(b) **$5^3 \times 5^4 = 5^{8}$**

(c) **$q^3 \times q^{12}$**

$= q^{15}$

23. **$p^{8+9} = p^x$**

$x = 17$

24. **$= 27$**

25. **$= 7r^2 / 2q^2$**