

EduSahara™ Learning Center Assignment**Grade : Class VIII, ICSE****Chapter : Exponents****Name : Equations involving Base Powers****Licensed To : Teachers and Students for non-commercial use**

1. If $3^j = 9$, find j

(i) 5 (ii) 1 (iii) 2 (iv) 3 (v) (-1)

2. If $5^P = 625$, find 6^P

(i) 1295 (ii) 1296 (iii) 1293 (iv) 1299 (v) 1297

3. If $3^{(10e+5)} = 27^{(3e+3)}$, find e

(i) 7 (ii) 1 (iii) 5 (iv) 4 (v) 3

4. If $27^{3s} = 729^{(s+1)}$, find s

(i) 2 (ii) 4 (iii) 3 (iv) 1 (v) 0

5. If $27^{(p+15)} = 243^{27} = 3^q$, find q

(i) 135 (ii) 136 (iii) 134 (iv) 137 (v) 133

6. If $2^q = 8$, find $2^{(q+2)}$

(i) 35 (ii) 32 (iii) 31 (iv) 33 (v) 29

7. $(x)^{(b-c)} \cdot (x)^{(c-d)} \cdot (x)^{(d-b)} =$

(i) 0 (ii) 3 (iii) (-2) (iv) 2 (v) 1

8. If $(9^{18})^{50} = (9^{100})^s$, find s

(i) 11 (ii) 9 (iii) 8 (iv) 10 (v) 7

9. If $81 \times 9^d = 9^6$, find d

(i) 1 (ii) 4 (iii) 7 (iv) 5 (v) 3

10. If $4(3s+4) \div 64 = 4^7$, find s

(i) 1 (ii) 3 (iii) 0 (iv) 2 (v) 4

11. If $12348 = d^2 \times e^2 \times f^3$, find d, e, f

(i) (2,6,7) (ii) (2,3,7) (iii) (5,3,4) (iv) (2,3,10) (v) (5,3,7)

12. If $518616 = 7^s \times 2^t \times 3^u$, find s, t, u

(i) (4,3,3) (ii) (7,3,0) (iii) (4,3,6) (iv) (7,3,3) (v) (4,6,3)

13. If $e^t = f$, $f^u = g$ and $g^v = e$, then $tuv =$

(i) -1 (ii) 0 (iii) 1 (iv) efg (v) $(e+f+g)$

14. If $f^u = g^v = h^w = i^x$ and $fg = hi$, then

(i) $vw = ux$

(ii) $\frac{1}{v} + \frac{1}{u} = \frac{1}{w} + \frac{1}{x}$

(iii) $\frac{1}{v} + \frac{1}{x} = \frac{1}{w} + \frac{1}{u}$

(iv) $\frac{1}{v} + \frac{1}{w} = \frac{1}{u} + \frac{1}{x}$

(v) $vu = wx$

15. If $g^{(u-1)} = hi$, $h^{(v-1)} = ig$, $i^{(w-1)} = gh$ then

a) $(u+v+w) = 1$

b) $uvw = 1$

c) $uv + vw + wu = uvw$

d) $uv + vw + wu = 0$

e) $uv + vw + wu = 1$

(i) {b,c} (ii) {c} (iii) {a,c} (iv) {d,e,c}

16. Simplify $\left(\frac{u^d}{u^e}\right)^{(d+e)} \left(\frac{u^e}{u^f}\right)^{(e+f)} \left(\frac{u^f}{u^d}\right)^{(f+d)}$

- (i) 1 (ii) u (iii) 0 (iv) -1 (v) $u^{(d+e+f)}$
-

17. Simplify $\left(z^n\right)^{(o-p)} \left(z^o\right)^{(p-n)} \left(z^p\right)^{(n-o)}$

- (i) $z^{(n+o+p)}$ (ii) -1 (iii) 1 (iv) z (v) 0
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18. Simplify $\left(x^{(d+e)}\right)^{(d-e)} \left(x^{(e+f)}\right)^{(e-f)} \left(x^{(f+d)}\right)^{(f-d)}$

- (i) 1 (ii) $x^{(d+e+f)}$ (iii) 0 (iv) -1 (v) x
-

19. Simplify $\left(\frac{z^d}{z^e}\right)^f \left(\frac{z^e}{z^f}\right)^d \left(\frac{z^f}{z^d}\right)^e$

- (i) 1 (ii) $z^{(d+e+f)}$ (iii) -1 (iv) z (v) 0
-

20. $\left(f^{(-9)} + g^{(-9)}\right)^0 =$

- (i) 1 (ii) 0 (iii) 3 (iv) (-2) (v) $f^{(-9)} + g^{(-9)}$
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Assignment Key

- 1) (iii)
- 2) (ii)
- 3) (iv)
- 4) (i)
- 5) (i)
- 6) (ii)
- 7) (v)
- 8) (ii)
- 9) (ii)
- 10) (iv)
- 11) (ii)
- 12) (i)
- 13) (iii)
- 14) (ii)
- 15) (ii)
- 16) (i)
- 17) (iii)
- 18) (i)
- 19) (i)
- 20) (i)