

A2.N.1: Negative and Fractional Exponents 2: Evaluate numerical expressions with negative and/or fractional exponents, without the aid of a calculator

- 1 What is the value of 3^{-2} ?
- 2 What is the value of 2^{-3} ?
- 3 What is the value of $3^0 + 3^{-2}$?
- 4 If $f(x) = 4x^0 + (4x)^{-1}$, what is the value of $f(4)$?
- 5 If $f(x) = (x^{-x} - x^0 + 2^x)$, then $f(3)$ is equal to
- 6 The expression $\left(\frac{3}{4}\right)^2 \cdot \left(\frac{1}{4}\right)^{-2}$ is equivalent to
- 7 If $a = 3$ and $b = -2$, what is the value of the expression $\frac{a^{-2}}{b^{-3}}$?
- 8 If $f(x) = x^{-\frac{3}{2}}$, then $f\left(\frac{1}{4}\right)$ is equal to
- 9 The value of $\left(\frac{8}{27}\right)^{-\frac{2}{3}}$ is
- 10 The value of $(-64)^{\frac{2}{3}}$ is
- 11 If $f(x) = x^{-\frac{1}{3}}$, what is $f(64)$?
- 12 What is the value of the expression $2x^{-\frac{1}{3}}$ when $x = 8$?
- 13 The expression $4^{\frac{1}{2}} \cdot 2^3$ is equal to
- 14 If $x = 4$, the value of $4x^{\frac{1}{2}} + (x^0 + 3)^{-1}$ is
- 15 What is the value of $4x^{\frac{1}{2}} + x^0 + x^{-\frac{1}{4}}$ when $x = 16$?
- 16 If $f(x) = 3x^2 + 3x^{\frac{1}{2}} + 3x$, then $f(-9)$ is equal to
- 17 The value of $\left(\frac{3^0}{27^{\frac{2}{3}}}\right)^{-1}$ is
- 18 The expression $\frac{3^{\frac{1}{3}}}{3^{-\frac{2}{3}}}$ is equivalent to

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Answer Section

1 ANS:

$$\frac{1}{9}$$

REF: 060020a

2 ANS:

$$\frac{1}{8}$$

REF: 080522a

3 ANS:

$$1\frac{1}{9}$$

REF: 010723a

4 ANS:

$$4\frac{1}{16}$$

REF: 060406b

5 ANS:

$$7\frac{1}{27}$$

REF: 080701b

6 ANS:

$$9$$

REF: 080730a

7 ANS:

$$-\frac{8}{9}$$

$$\frac{3^{-2}}{(-2)^{-3}} = \frac{\frac{1}{9}}{-\frac{1}{8}} = -\frac{8}{9}$$

REF: 061003a2

8 ANS:

$$8$$

REF: 060602b

9 ANS:

$$\frac{9}{4}$$

REF: 018922a

10 ANS:

$$16$$

REF: 019520siii

11 ANS:

$$\frac{1}{4}$$

REF: 080116siii

12 ANS:

$$1$$

REF: 060132siii

13 ANS:

$$16$$

REF: 080601b

14 ANS:

$$8\frac{1}{4}$$

REF: 019418siii

15 ANS:

$$17\frac{1}{2}$$

$$f(16) = 4(16)^{\frac{1}{2}} + 16^0 + 16^{-\frac{1}{4}}$$

$$= 4(4) + 1 + \frac{1}{2}$$

$$= 17\frac{1}{2}$$

REF: 081503a2

16 ANS:

$$216 + 9i$$

REF: 089431siii

17 ANS:

$$9$$

REF: 010217b

18 ANS:
3

REF: 080218b