

A.APR.D.6: Expressions with Negative Exponents 1

- 1 What is the value of 3^{-2} ?
1) $\frac{1}{9}$ 2) $-\frac{1}{9}$ 3) 9 4) -9
- 2 What is the value of 2^{-3} ?
1) $\frac{1}{6}$ 2) $\frac{1}{8}$ 3) -6 4) -8
- 3 What is the value of $3^0 + 3^{-2}$?
1) 0 2) $\frac{1}{9}$ 3) $1\frac{1}{9}$ 4) 6
- 4 The expression $8^{-4} \cdot 8^6$ is equivalent to
1) 8^{-24} 2) 8^{-2} 3) 8^2 4) 8^{10}
- 5 The expression $\left(\frac{3}{4}\right)^2 \cdot \left(\frac{1}{4}\right)^{-2}$ is equivalent to
1) $\frac{9}{16}$ 2) $\frac{9}{256}$ 3) 3 4) 9
- 6 If $a = 3$ and $b = -2$, what is the value of the expression $\frac{a^{-2}}{b^{-3}}$?
1) $-\frac{9}{8}$ 2) -1 3) $-\frac{8}{9}$ 4) $\frac{8}{9}$
- 7 If $f(x) = 4x^0 + (4x)^{-1}$, what is the value of $f(4)$?
1) -12 2) 0 3) $1\frac{1}{16}$ 4) $4\frac{1}{16}$
- 8 If $f(x) = (x^{-x} - x^0 + 2^x)$, then $f(3)$ is equal to
1) $8\frac{1}{27}$ 2) $7\frac{1}{27}$ 3) -21 4) -22
- 9 Evaluate: $-10x^0$
- 10 If $f(x) = x + x^{-1}$, find the value of $f(4)$.
- 11 If $f(x) = 4x^{-2} - 2x^0$, find the value of $f(2)$.
- 12 If $f(b) = b^0 + b^{-1} + b^{-2}$, find $f(2)$.
- 13 If $f(a) = a^0 + a^{-2}$, find $f(-2)$.
- 14 If a function p is defined by $p(x) = \frac{2x^2 - x^0}{7}$, find the value of $p(-2)$.

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Answer Section

1 ANS: 1 REF: 060020a

2 ANS: 2 REF: 080522a

3 ANS: 3 REF: 010723a

4 ANS: 3 REF: 010413a

5 ANS: 4

$$\left(\frac{3}{4}\right)^2 \cdot \left(\frac{1}{4}\right)^{-2} = \frac{9}{16} \cdot 16 = 9$$

REF: 080730a

6 ANS: 3

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

REF: 061003a2

7 ANS: 4

$$f(x) = 4x^0 + (4x)^{-1}$$

$$f(4) = 4(4)^0 + (4(4))^{-1}$$

$$= 4(1) + \frac{1}{16}$$

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

REF: 060406b

8 ANS: 2

$$f(x) = (x^{-x} - x^0 + 2^x)$$

$$f(3) = (3^{-3} - 3^0 + 2^3)$$

$$= \frac{1}{27} - 1 + 8$$

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

REF: 080701b

9 ANS:
-10

REF: 089306siii

10 ANS:

$$\frac{17}{4}$$

REF: 018403siii

11 ANS:

$$-1$$

REF: 088403siii

12 ANS:

$$1\frac{3}{4}$$

REF: 060302siii

13 ANS:

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

REF: 068812siii

14 ANS:

$$1$$

REF: 068503siii