

Unit 1.4 Examples of Zero and negative exponents

Period _____

Simplify. Your answer should contain only positive exponents.

1) $\frac{(2r)^{-2}}{-r^3 \cdot 2r^2}$

2) $\frac{-2x^{-4}}{-x^0 \cdot (-2x^{-3})^{-2}}$

3) $\frac{2n^4}{(n^{-4})^{-4} \cdot (n^0)^{-1} \cdot n^4}$

4) $\frac{(-n^{-4})^2}{-2n^4 \cdot (-n^{-2})^{-4}}$

5) $\frac{n^3 \cdot -n^0}{(-n)^0}$

6) $\frac{(2x^4)^3}{-x^3 \cdot -x}$

7) $\frac{r^0 \cdot -r^{-3}}{(2r)^4}$

8) $-\frac{n^{-4} \cdot (-2n^4)^{-1}}{2n^{-1}}$

9) $\frac{2b^{-3} \cdot 2b^2}{(-2b^0)^{-4}}$

10) $-\frac{2r^3}{(2r^{-4})^4 \cdot -r^3}$

11) $\frac{2v \cdot (-2v^{-3})^2}{-v^{-1}}$

12) $\left(-\frac{2x^0 \cdot -x^2}{(x^3)^{-2}}\right)^{-4}$

13) $\frac{(-2r^3)^{-1}}{-2r^{-1} \cdot (-2r)^3}$

14) $\left(\frac{(-x^2)^{-3}}{2x^4 \cdot x^{-1}}\right)^3$

$$15) \frac{v^2}{(-2u^3v^0)^4 \cdot -u^4v^{-1}}$$

$$16) \frac{2m^{-4}n^0}{(-nm^0)^3 \cdot 2m^4n^2}$$

$$17) \left(-\frac{2x^2y^{-3} \cdot -2y^4 \cdot -2yx^4}{y^{-2}} \right)^{-1}$$

$$18) -\frac{aba^2}{(2ba^0)^2}$$

$$19) \frac{(-m^3n^3)^3}{-n^4 \cdot mn^4}$$

$$20) \frac{x^{-1}y^{-3}}{(-2x^4)^3 \cdot -2xy^4}$$

$$21) \frac{-2y^3 \cdot (2x^{-2}y^3)^4 \cdot -xy^4}{-y^0}$$

$$22) -\frac{u^4v^3}{(-v^{-2})^{-2} \cdot -2u^{-2}}$$

$$23) \frac{(2m^{-3}n^0)^{-2}}{nm^{-3} \cdot -n^4}$$

$$24) \left(\frac{2a^{-4}b^3}{-2b^2 \cdot -b^{-2}} \right)^0$$

$$25) -\frac{x^{-1}y^0}{(-2y^0z^2)^4 \cdot zx^0}$$

$$26) \left(\frac{n^2}{-m \cdot -mp^2} \right)^{-1}$$

$$27) \frac{(-2q^2r^{-2})^2}{p^2q^4r^{-3} \cdot -2pq^{-2}r^2}$$

$$28) \frac{(-2y^{-4}z^{-2} \cdot -zx^2y^3)^4}{2x^4y^3z^2}$$

$$29) \frac{-yx^0z^0 \cdot (-2y^{-1}z^{-3})^3}{-2x^3y^{-4}z^4}$$

$$30) \frac{2jh^2k^4 \cdot -hj^4k^3}{(2hj^4)^3}$$

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Simplify. Your answer should contain only positive exponents.

$$1) \frac{(2r)^{-2}}{-r^3 \cdot 2r^2}$$

$$-\frac{1}{8r^7}$$

$$2) \frac{-2x^{-4}}{-x^0 \cdot (-2x^{-3})^{-2}}$$

$$\frac{8}{x^{10}}$$

$$3) \frac{2n^4}{(n^{-4})^{-4} \cdot (n^0)^{-1} \cdot n^4}$$

$$\frac{2}{n^{16}}$$

$$4) \frac{(-n^{-4})^2}{-2n^4 \cdot (-n^{-2})^{-4}}$$

$$-\frac{1}{2n^{20}}$$

$$5) \frac{n^3 \cdot -n^0}{(-n)^0}$$

$$-n^3$$

$$6) \frac{(2x^4)^3}{-x^3 \cdot -x}$$

$$8x^8$$

$$7) \frac{r^0 \cdot -r^{-3}}{(2r)^4}$$

$$-\frac{1}{16r^7}$$

$$8) -\frac{n^{-4} \cdot (-2n^4)^{-1}}{2n^{-1}}$$

$$\frac{1}{4n^7}$$

$$9) \frac{2b^{-3} \cdot 2b^2}{(-2b^0)^{-4}}$$

$$\frac{64}{b}$$

$$10) -\frac{2r^3}{(2r^{-4})^4 \cdot -r^3}$$

$$\frac{r^{16}}{8}$$

$$11) \frac{2v \cdot (-2v^{-3})^2}{-v^{-1}}$$

$$-\frac{8}{v^4}$$

$$12) \left(-\frac{2x^0 \cdot -x^2}{(x^3)^{-2}} \right)^{-4}$$

$$\frac{1}{16x^{32}}$$

$$13) \frac{(-2r^3)^{-1}}{-2r^{-1} \cdot (-2r)^3}$$

$$-\frac{1}{32r^5}$$

$$14) \left(\frac{(-x^2)^{-3}}{2x^4 \cdot x^{-1}} \right)^3$$

$$-\frac{1}{8x^{27}}$$

$$15) \frac{v^2}{(-2u^3v^0)^4 \cdot -u^4v^{-1}} \\ -\frac{v^3}{16u^{16}}$$

$$16) \frac{2m^{-4}n^0}{(-nm^0)^3 \cdot 2m^4n^2} \\ -\frac{1}{m^8n^5}$$

$$17) \left(\frac{-2x^2y^{-3} \cdot -2y^4 \cdot -2yx^4}{y^{-2}} \right)^{-1} \\ -\frac{1}{8y^4x^6}$$

$$18) -\frac{aba^2}{(2ba^0)^2} \\ -\frac{a^3}{4b}$$

$$19) \frac{(-m^3n^3)^3}{-n^4 \cdot mn^4} \\ m^8n$$

$$20) \frac{x^{-1}y^{-3}}{(-2x^4)^3 \cdot -2xy^4} \\ \frac{1}{16x^{14}y^7}$$

$$21) \frac{-2y^3 \cdot (2x^{-2}y^3)^4 \cdot -xy^4}{-y^0} \\ -\frac{32y^{19}}{x^7}$$

$$22) -\frac{u^4v^3}{(-v^{-2})^{-2} \cdot -2u^{-2}} \\ \frac{u^6}{2v}$$

$$23) \frac{(2m^{-3}n^0)^{-2}}{nm^{-3} \cdot -n^4} \\ -\frac{m^9}{4n^5}$$

$$24) \left(\frac{2a^{-4}b^3}{-2b^2 \cdot -b^{-2}} \right)^0 \\ 1$$

$$25) -\frac{x^{-1}y^0}{(-2y^0z^2)^4 \cdot zx^0} \\ -\frac{1}{16xz^9}$$

$$26) \left(\frac{n^2}{-m \cdot -mp^2} \right)^{-1} \\ \frac{m^2p^2}{n^2}$$

$$27) \frac{(-2q^2r^{-2})^2}{p^2q^4r^{-3} \cdot -2pq^{-2}r^2} \\ -\frac{2q^2}{r^3p^3}$$

$$28) \frac{(-2y^{-4}z^{-2} \cdot -zx^2y^3)^4}{2x^4y^3z^2} \\ \frac{8x^4}{y^7z^6}$$

$$29) \frac{-yx^0z^0 \cdot (-2y^{-1}z^{-3})^3}{-2x^3y^{-4}z^4} \\ -\frac{4y^2}{z^{13}x^3}$$

$$30) \frac{2jh^2k^4 \cdot -hj^4k^3}{(2hj^4)^3} \\ -\frac{k^7}{4j^7}$$