

## 10-1-10-4 Quiz review

$$\textcircled{1} \quad \frac{1}{5} \cdot \frac{1}{5} \cdot \frac{1}{5} \cdot \frac{1}{5} \cdot \frac{1}{5} = \left(\frac{1}{5}\right)^5$$

① ② ③ ④ ⑤

$$\begin{array}{cccc} (-2) & (-2) & (-2) & \\ \textcircled{1} & \textcircled{2} & \textcircled{3} & \end{array} = (-2)^3$$

$$\textcircled{3} \quad y \cdot y \cdot y \cdot y \cdot y \cdot y = y^6$$

$$\textcircled{4} \quad 4 \cdot 4 \cdot 4 \cdot C \cdot C = 4^3 C^2$$

$$\textcircled{5} \quad 2^4$$

$$2 \cdot 2 \cdot 2 \cdot 2 = 16$$

$$\textcircled{6} \quad (-3)^3 =$$

$$(-3)(-3)(-3)$$

$$\textcircled{-27}$$

$$\textcircled{7} \quad \frac{3^{\textcircled{4}}}{3^{\textcircled{5}}}$$

Divide = subtract exponents

$$3^{4-5} = 3^{\textcircled{-1}} = \frac{1}{3}$$



$$\textcircled{8} \quad (-2.6)^4 (-2.6)^{-4}$$

Mult = Add exponents

$$(-2.6)^{4+(-4)} = (-2.6)^0 = 1$$

$$\textcircled{9} \quad (-1)^3 \cdot (-1)^2$$

$$(-1)^{3+2} = (-1)^5$$

$$\textcircled{10} \quad (b^4)^2 = b^{4 \cdot 2} = \textcircled{b^8}$$

power to power = mult

$$\textcircled{11} \quad (4f)^3$$
$$4^3 f^3$$
$$\textcircled{64f^3}$$

$$12 \quad \left( \frac{-3}{8} t^2 \right)^2$$

$$\left( \frac{-3}{8} \right)^2 \cdot (t^2)^2$$

$$\frac{9}{64} t^4$$

13

$$\frac{(-2)^{10}}{(-2)^5}$$

$$(-2)^{10-5} = (-2)^5$$

$$\frac{5^4 \cdot 5^9}{5^6} = \frac{5^{4+9} \cdot 5^{13}}{5^6}$$

$$5^{13-6} = 5^7$$

(15)

$$\frac{x^{14}}{x^4 \cdot x^2} = \frac{x^{14}}{x^{4+2}} = \frac{x^{14}}{x^6}$$

$$x^{14-6} = x^8$$

16

$$\frac{y^3}{y^{11}} \cdot \frac{y^{21}}{y^9} = \frac{y^{3+21}}{y^{11+9}} = \frac{y^{24}}{y^{20}}$$

$$y^{24-20} = y^4$$

17

$$4c^{-5} c^2 =$$

$$4 \cdot c^{-5} \cdot c^2 = \frac{4c^2}{c^5} = 4c^{2-5}$$

negative exponents (tip)  $= 4c^{-3}$

$$= \frac{4}{c^3}$$

18

$$\frac{3x^2}{9x^5} = \frac{3 \cdot x^2}{9 \cdot x^5} = \frac{1x^{2-5}}{3}$$

$$\frac{1}{3}x^{-3} = \frac{1}{3x^3}$$

$$x^3 x^5 = x^{15}$$

No, add exponents should be

$$x^{5+3} = x^8$$

$$\frac{(-2)^{4x+2}}{(-2)^{2x}} = (-2)^{12}$$

$$x = 5$$

$$2.) \left(\frac{1}{3}\right)^3$$

$$\frac{1}{3} \cdot \frac{1}{3} \cdot \frac{1}{3} = \frac{1}{27}$$

22

$$2^5$$

$$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32$$

23

$$(-3)^4$$

$$(-3)(-3)(-3) = 81$$



24

$$\frac{1}{3} (2^4 + 2)$$

$$\frac{1}{2} (16 + 2)$$

$$\frac{1}{2} (18) = 6$$

25

$$9^2 - 4^3$$

$$81 - 64 = 17$$

Add Fractions  
Common Den.

$$\begin{aligned} & \frac{3}{4^2} + \frac{5}{2^3} = \\ \rightarrow & \frac{3}{16} + \frac{5}{8} = \frac{3}{16} + \frac{10}{16} \\ & \frac{13}{16} \end{aligned}$$

$$d = 5t^2$$

d = distance

$$\textcircled{28} \quad (3x)^4 = 3^4 \cdot x^4 = 81x^4$$

$$\textcircled{29} \quad \frac{2^5}{2^4} = 2^{5-4} = 2$$

$$\textcircled{30} \quad \frac{(4a)^3}{a^5} = \frac{4^3 \cdot a^3}{a^5} = 64a^2$$

$$\textcircled{31} \quad \frac{3^3 x^2}{3x} = 9x$$

$$\textcircled{32} \quad (4x^2)(2xy)^3$$

$$4 \cdot x^2 \cdot 2^3 \cdot x^3 \cdot y^3$$

$$\boxed{4} \cdot x^2 \cdot \boxed{8} \cdot x^3 \cdot y^3$$
$$32x^5y^3$$

$$\textcircled{33} \quad w^3(w^2 \cdot w^5)$$

$$w^3(w^7)$$

$$w^3 \cdot w^7 = w^{3+7} = w^{10}$$

$$\frac{3}{10^3} = .003$$

$$\frac{6}{.003} = 2,000$$

(35)

$$10^{-3}$$

$$10^6$$

$$\frac{10^3}{10^6} = 10^{-9} = \frac{1}{10^9}$$

$$\textcircled{36} \quad 8w^{-5} = \frac{8}{w^5}$$
$$8 \cdot \textcircled{w^{-5}}$$

$$2x^{-3} \cdot 5x^{-7}$$
$$\underline{2} \cdot \underline{x^{-3}} \cdot \underline{5} \cdot \underline{x^{-7}}$$
$$\frac{2 \cdot 5}{x^3 \cdot x^7} = \frac{10}{x^{10}}$$

$$\textcircled{38} \quad \frac{(2g)^3}{(fg)^2} = \frac{2^3 \cdot g^3}{f^2 \cdot g^2}$$

$$\frac{1}{8g^5f^2} = \frac{1}{2^3 \cdot g^3 \cdot f^2 \cdot g^2}$$