

8-29-19 4th Trig

$$\textcircled{1} (n+7)^2$$

$$(n+7)(n+7)$$

$$n^2 + 7n + 7n + 49$$

$$n^2 + 14n + 49$$

$$\textcircled{2} (2a^{-3})^{-2}$$

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

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

$$\frac{a^3}{2} \cdot \frac{a^3}{2} = \frac{a^6}{4}$$

$$\textcircled{3} (a^{-3}b^{-2})^{-2}$$

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

$$(a^3b^2)^2$$

$$a^3b^2 \cdot a^3b^2 = a^6b^4$$

$$\textcircled{4} (n+2)(n+2)(n+2)$$

$$n^2+2n+2n+4$$

$$(n+2)(n^2+4n+4)$$

$$n^3+4n^2+4n+2n^2+8n+8$$

$$n^3+6n^2+12n+8$$

$$\textcircled{5} (2s^{-3}t^{-2}vd^{-2})^{-2}$$

$$\left(\frac{2v}{s^3t^2d^2}\right)^{-1 \cdot 2}$$

$$\left(\frac{s^3t^2d^2}{2v}\right)^2$$

$$\frac{s^3t^2d^2}{2v} \cdot \frac{s^3t^2d^2}{2v}$$

$$\frac{s^6t^4d^4}{4v^2}$$

$$\textcircled{6} \sqrt[3]{16x^4y^8}$$

$$2xyy \sqrt[3]{2 \cdot 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y}$$

$$2xy^2 \sqrt[3]{2xy^2}$$

$$\textcircled{7} (2n^3y^4)^2 + n(n^5)y^8$$

$$2n^3y^4 \cdot 2n^3y^4 + n^6y^8$$

$$4n^6y^8 + 1n^6y^8$$

$$5n^6y^8$$

$$\textcircled{8} (3n^2y^4)^2 + n(n^4)y^3y^5$$

$$3n^2y^4 \cdot 3n^2y^4 + n^5y^8$$

$$9n^4y^8 + n^5y^8$$

$\textcircled{9}$ Which digit in $\overline{.1248}$ is in the 151st spot? 4

$\overline{.1248}$ $\overline{.1248}$ $\overline{.1248}$ $\overline{.1248}$ $\overline{.124}$
 1 2 3 4 5 6 7 8 9 10 11 12 ... 148 151

$$\frac{151}{4} = 37.75$$

$$\begin{array}{r} 37 \\ \times 4 \\ \hline 148 \end{array}$$

$$\textcircled{10} (7^3 \cdot 7^5)^2$$

$$(77777777)^2$$

$$(7^8)^2$$

$$7^8 \cdot 7^8$$

$$7^{16}$$

(11)

2345678
1 2 3 4 5 6 7

1000^{th} digit

7

7
14
21
28
35
⋮

$$\frac{1000}{7} = 142 \dots$$

$$\begin{array}{r} 142 \\ \times 7 \\ \hline 994 \end{array}$$

142^{th} row

994

(12) $(5n^3 + 2)^2$

$$(5n^3 + 2)(5n^3 + 2)$$

$$25n^6 + 10n^3 + 10n^3 + 4$$

$$25n^6 + 20n^3 + 4$$