

8-31-17 1st Trig

Ch 1 PT 2

$$\begin{aligned} \textcircled{45} \quad (2^5 \cdot 2^3)^9 & \quad (a^5 \cdot a^3)^9 \\ (2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2)^9 & \quad (a^8)^9 \\ (2^8)^9 & \quad a^8 \cdot a^8 \cdot a^8 \cdots a^8 \\ & \quad a^{72} \\ 2^8 \cdot 2^8 \cdot 2^8 \cdots 2^8 & = 2^{72} \end{aligned}$$

$\textcircled{46}$ 1000th spot in $\overbrace{2345678}^{1000^{\text{th}}}$

Row 1	1 2 3 4 5 6 7
Row 2	8 9 10 11 12 13 14
Row 3	15 16 17 18 19 20 21

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

Row 20 $\xrightarrow{\times 7}$ 140
Row 100 $\xrightarrow{\times 7}$ 700
Row 142 $\xrightarrow{\times 7}$ 994

New practice

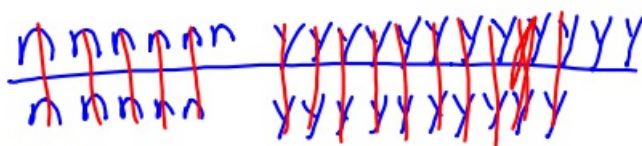
$$\textcircled{1} \left(\frac{8a^2b^{-3}}{c^{-2}} \right)^{-2}$$

$$\left(\frac{8a^2c^2}{b^3} \right)^{-1 \cdot 2}$$

$$\left(\frac{b^3}{8a^2c^2} \right)^2$$

$$\frac{b^3}{8a^2c^2} \cdot \frac{b^3}{8a^2c^2} = \frac{b^6}{64a^4c^4}$$

$$\textcircled{2} \frac{n^6}{y^{10}} \cdot \frac{y^{12}}{n^5} = \frac{n^6 y^{12}}{y^{10} n^5}$$



$$ny^2$$

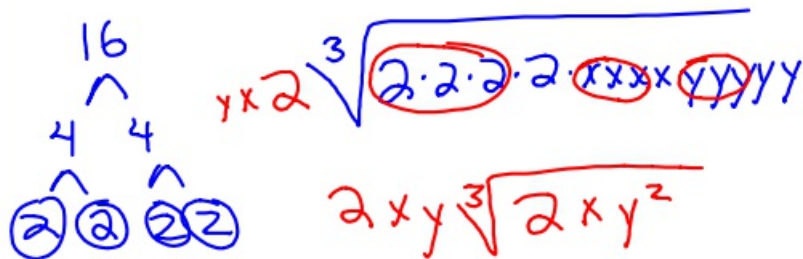
$$\textcircled{3} (2s^{-3}t^2d^{-1})^{-2}$$

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

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

$$\frac{s^3d}{2t^2} \cdot \frac{s^3d}{2t^2} = \frac{s^6d^2}{4t^4}$$

$$\textcircled{4} \sqrt[3]{16x^4y^5}$$



$$\textcircled{5} (a^2b^3c)(a^3bc)$$

$$aabbcc \quad a^2b^3c^2$$

$$a^5b^4c^2$$

$$\textcircled{6} \sqrt{-40} = \sqrt{-1 \cdot 2 \cdot 2 \cdot 2 \cdot 5}$$

$$2i\sqrt{10}$$

$$\textcircled{7} \frac{4 \pm \sqrt{-8}}{2} = \frac{4 \pm 2i\sqrt{2}}{2}$$

$$2 \pm i\sqrt{2}$$

$$\textcircled{8} (7ab^2)(-7ab)$$

$$7abb \cdot -7ab$$

$$-49a^2b^3$$

$$\textcircled{9} \quad 3(2n-1) - (2n-6) = 12$$

$$6n - 3 - 2n + 6 = 12$$

$$\begin{array}{r} 4n + 3 = 12 \\ -3 \quad -3 \\ \hline \end{array}$$

$4\sqrt{9}$

$$\frac{4n}{4} = \frac{9}{4}$$



$$n = 2\frac{1}{4}$$

$$\textcircled{10} \quad \left(\frac{3a^4}{5}\right)^{-2}$$

$$\left(\frac{3a^4}{5}\right)^{-1 \cdot 2}$$

$$\left(\frac{5}{3a^4}\right)^2 = \frac{5}{3a^4} \cdot \frac{5}{3a^4} = \frac{25}{9a^8}$$

$$\textcircled{11} \quad (n+3)^2$$

$$(n+3)(n+3)$$

$$n^2 + 3n + 3n + 9$$

$$n^2 + 6n + 9$$

8-31-17 3rd Try

Ch 1 PT 2

$$\textcircled{45} (2^5 \cdot 2^3)^9 \quad (a^5 \cdot a^3)^9$$
$$(2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2)^9 \quad (a^8)^9$$
$$(2^8)^9 \quad a^8 \cdot a^8 \cdot a^8 \dots a^8$$
$$a^{72}$$

$$2^8 \cdot 2^8 \cdot 2^8 \cdot 2^8 \cdot 2^8 \cdot 2^8 \cdot 2^8 \cdot 2^8 \cdot 2^8$$
$$2^{72} \quad 11/25$$

$$\textcircled{46} 1000^{72} \cdot \overline{2345678}$$

Row 1	1	2	3	4	5	6	7
Row 2	8	9	10	11	12	13	14
Row 3	15	16	17	18	19	20	21

$$\text{Row 50} \xrightarrow{\times 7} 350$$
$$\text{Row 142} \xrightarrow{\times 7} 994$$
$$\frac{1000}{7} = 142 \dots$$

$$\textcircled{47} n^2 y^2 + n^3 y + 9n^2 y^2 + n^3 y$$
$$10n^2 y^2 + 2n^3 y$$

$$\textcircled{1} \left(\frac{3}{2}\right)^{-3}$$
$$\left(\frac{3}{2}\right)^{-1} \cdot 3$$
$$\left(\frac{2}{3}\right)^3 = \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3} = \frac{8}{27}$$

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

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

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

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

$$\textcircled{3} \sqrt[3]{16a^4b^6}$$

$$2abb \sqrt[3]{2 \cdot a \cdot a \cdot a \cdot a \cdot c \cdot c \cdot c \cdot b \cdot b \cdot b \cdot b \cdot b}$$

$$2ab^2 \sqrt[3]{2a}$$

$$\textcircled{4} \left(\frac{a^{-2}b^3}{c^{-3}}\right)^{-2}$$

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

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

$$\frac{a^2}{b^3c^3} \cdot \frac{a^2}{b^3c^3} = \frac{aa}{bbbccc} \cdot \frac{aa}{bbbccc} = \frac{a^4}{b^6c^6}$$

$$\textcircled{5} (2s^2x^{-3}y^{-1})^{-2}$$

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

$$\left(\frac{x^3y}{2s^2} \right)^2$$

$$\frac{x^3y}{2s^2} \cdot \frac{x^3y}{2s^2} = \frac{x^6y^2}{4s^4}$$

$$\textcircled{6} \sqrt{-80a^2}$$

80 $a^2 \cdot 2 \cdot i \sqrt{1 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \cdot a^2}$

8 \uparrow 10 \uparrow

4 \uparrow 2 2 5

2 2

$4ai\sqrt{5}$

$$\textcircled{7} (7ab^2)(-7ab)$$

$$7 \cdot a \cdot b \cdot b \cdot -7 \cdot a \cdot b$$

$$-49a^2b^3$$

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

$$2n^3y^2 \cdot 2n^3y^2 + n \cdot n \cdot n \cdot n \cdot n \cdot y \cdot y \cdot y$$

$$2n^3y^2 \cdot 2n^3y^2 + n \cdot n \cdot n \cdot n \cdot n \cdot y \cdot y \cdot y$$

$$4n^6y^4 + n^6y^3$$

$$\textcircled{9} \quad 6(n-2) - (3n+1) = 25$$

$$6n - 12 - 3n - 1 = 25$$

$$3n - 13 = 25$$

$$+13 \quad +13$$

$$3 \overline{) 38} \begin{array}{r} 12 \text{ r. } 2 \\ 36 \\ \hline 2 \end{array}$$

$$\frac{3n}{3} = \frac{38}{3}$$

$$n = 12 \frac{2}{3}$$

8-31-17 4th Tr. 3

(45) $(2^5 \cdot 2^3)^9$ $(a^5 \cdot a^3)^9$
 $(\underbrace{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}_{2^5} \cdot \underbrace{2 \cdot 2 \cdot 2}_{2^3})^9$ $(a^8)^9$
 $(2^8)^9$ $a^8 \cdot a^8 \cdot a^8 \dots a^8$
 $2^8 \cdot 2^8 \cdot 2^8 \dots 2^8$ a^{72}
 2^{72}

(46) 1000^{th}

	1000^{th}
	<u>2345678</u>
	1 2 3 4 5 6 7
Row 2	8 9 10 11 12 13 14
Row 3	15 16 17 18 19 20 21

$$\begin{array}{r} 1000 \\ \times 7 \\ \hline 7000 \end{array} = 142$$

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

Row 100 $\xrightarrow{\times 7}$ 700
 Row 142 $\xrightarrow{\times 7}$ 994

New practice

① $(-2n^4)^3$
 $-2n^4 \cdot -2n^4 \cdot -2n^4 = -8n^{12}$

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

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

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

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

$$\textcircled{3} \sqrt{-40a^2}$$

$40 \begin{matrix} \wedge \\ 4 \quad 10 \\ \textcircled{2} \textcircled{2} \quad \textcircled{2} \textcircled{5} \end{matrix}$
 $a^2 \sqrt{-1 \cdot 2 \cdot 2 \cdot 2 \cdot 5 \cdot a \cdot a}$
 $2a i \sqrt{10}$

$$\textcircled{4} (2s^2 +^{-3}a^{-1})^{-2}$$

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

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

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

$$\textcircled{5} \left(\frac{a^{-3}b^2}{a^{-1}b^{-1}} \right)^{-2}$$

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

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

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

$$\textcircled{6} \quad \frac{n^6}{y^{10}} \cdot \frac{y^{12}}{n^5}$$

$$\frac{\cancel{n^6}^{\cancel{12}} y^{\cancel{12}^2}}{\cancel{y^{10}} \cancel{n^5}} = ny^2$$

$$\textcircled{10} \quad (n+4)^2$$

$$(n+4)(n+4)$$

$$n^2 + 4n + 4n + 16$$

$$n^2 + 8n + 16$$

$$\textcircled{11} \quad (2n^3y^4)^2 + n(n^5)y^6$$

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

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

$$\textcircled{12} \quad (ab^3)(4a^2b^2)$$

$$a b b b \quad 4 a a b b$$

$$4 a^3 b^5$$

$$\textcircled{13} \quad \frac{3 + \sqrt{27}}{3}$$

$$\frac{\cancel{3} + \cancel{3}\sqrt{3}}{\cancel{3}} = 1 + \sqrt{3}$$