

For Whom Was Mr. Bachelor Rabbit Searching?

Partner A

Set 1

I. $5n^3 \cdot n^2 = 5n^5$

E. $2n^4 \cdot 9n = 18n^5$

T. $-3n^2(8n^{-5})$
 $= \frac{-3n^2 \cdot 8}{n^5}$
 $= \frac{-24}{n^3}$

S. $(-15n)(-n^8) = 15n^9$

Set 2

D. $\frac{9x^7}{3x^2} = 3x^5$

H. $\frac{-30x^3}{5x^5} = \frac{-6}{x^2}$

U. $\frac{40x^7}{8x^{-1}} = \frac{40x^7 \cdot x}{8}$
 $= 5x^8$

A. $\frac{-2x^{-5}}{-6x^{-2}} = \frac{-2x^2}{-6x^3}$
 $= \frac{1}{3x}$

Partner B

Set 1

15. $3n^2 \cdot 6n^3 = 18n^5$

5. $5n^8 \cdot 3n = 15n^9$

1. $-2n^4(12n^{-7}) = \frac{-2n^4 \cdot 12}{n^7}$
 $= \frac{-24}{n^3}$

9. $(-5n)(-n^4)$
 $= 5n^5$

Set 2

17. $\frac{10x^9}{2x} = 5x^8$

13. $\frac{-15x^9}{-5x^3} = 3x^6$

10. $\frac{4x^{-1}}{12x^2} = \frac{4}{12x^2 \cdot x} = \frac{1}{3x^3}$

2. $\frac{18x^{-5}}{-3x^{-3}} = \frac{18x^2}{-3x^5}$
 $= \frac{-6}{x^3}$

Set 3

$$E. (5cd^2)(6c^2d^3) \\ = 30c^3d^5$$

$$Y. \frac{4cd^7(3c^4d^{-3})}{d^3} = 12c^5d^4$$

$$T. (9cd^5)(2c^3d)^2 \\ 9cd^5 \cdot 4c^6d^2 = 36c^7d^7$$

$$S. \frac{36c^5d^3(cd^2)^3}{36c^5d^3(c^3d^6)} = 36c^8d^9$$

Set 4

$$N. \left(\frac{4at^5}{a^3t^{-1}}\right)^2 = \left(\frac{4at^5 \cdot t}{a^3}\right)^2 \\ = \left(\frac{4t^6}{a^2}\right)^2 = \frac{16t^{12}}{a^4}$$

$$A. \left(\frac{3a^4t^2}{a^2t}\right)^4 = \left(\frac{3a^4}{a^2t \cdot t^2}\right)^4 \\ \left(\frac{3a^2}{t^3}\right)^4 = \frac{81a^8}{t^{12}}$$

$$L. \left(\frac{-2t^4}{at}\right)^6 = \left(\frac{-2t^3}{a}\right)^6 \\ = \frac{64t^{18}}{a^6}$$

$$M. \left(\frac{4a^3t^2}{9at^6}\right)^{-3} = \left(\frac{9at^6}{4a^3t^2}\right)^3 \\ = \left(\frac{9t^4}{4a^2}\right)^3 = \frac{729t^{12}}{64a^6}$$

Set 3

$$20. (bcd^3)(2c^4d) \\ = 12c^5d^4$$

$$7. \frac{3c^2d^7(10cd^{-2})}{d^2} \\ = \frac{3c^2d^7(10c)}{d^2} \\ = 30c^3d^5$$

$$12. \frac{(4c^4d^7)(3c^2d)^2}{(4c^4d^7)(9c^4d^2)} \\ = 36c^8d^9$$

$$4. \frac{36cd^4(c^2d)^3}{36cd^4} = 3c^7d^7$$

Set 4

$$3. \left(\frac{9a^5t^1}{at^5}\right)^2 = \left(\frac{9a^5}{at^5 \cdot t}\right)^2 \\ = \left(\frac{9a^4}{t^6}\right)^2 = \frac{81a^8}{t^{12}}$$

$$11. \left(\frac{4at^4}{a^3t^2}\right)^3 = \left(\frac{4at^4 \cdot t^2}{a^3}\right)^3 \\ = \left(\frac{4at^6}{a^3}\right)^3 = \left(\frac{4t^6}{a^2}\right)^3 = \frac{64t^{18}}{a^6}$$

$$18. \left(\frac{-2t^5}{at^2}\right)^4 = \left(\frac{-2t^3}{a}\right)^4 \\ = \frac{16t^{12}}{a^4}$$

$$14. \left(\frac{8a^4t}{27at^7}\right)^{-2} = \left(\frac{27at^7}{8a^4t}\right)^2 \\ = \left(\frac{27t^6}{8a^3}\right)^2 = \frac{729t^{12}}{64a^6}$$

Set 5

$$\begin{aligned} P. & (5x^6y)(2y^3)(3x^{-2}y^{-9}) \\ &= \frac{(5x^6y)(2y^3)(3)}{x^2y^9} \\ &= \frac{30x^6y^4}{x^2y^9} = \frac{30x^4}{y^5} \end{aligned}$$

$$\begin{aligned} N. & (4xy)^2(4xy^2) \\ & 16x^2y^2(4xy^2) = 64x^3y^4 \end{aligned}$$

$$\begin{aligned} C. & (xy)^{-3}(-x^7y^2)(30x^2) \\ & \frac{(-x^7y^2)(30x^2)}{(xy)^3} = \frac{-30x^9y^2}{x^3y^3} \\ &= -\frac{30x^6}{y} \end{aligned}$$

$$\begin{aligned} B. & x^9y^4(4x^{-1}y^2)^3 = x^9y^4 \cdot 64x^{-3}y^6 \\ & \frac{x^9y^4 \cdot 64y^6}{x^3} = 64x^6y^{10} \end{aligned}$$

Set 5

$$\begin{aligned} 8. & (-x^9y^2)(10y^5)(3x^{-3}y^{-8}) \\ &= \frac{(-x^9y^2)(10y^5) \cdot 3}{x^3y^8} \\ &= -\frac{30x^9y^7}{x^3y^8} = -\frac{30x^6}{y} \end{aligned}$$

$$\begin{aligned} 16. & (2xy)^5(2xy^5) \\ &= 32x^5y^5 \cdot 2xy^5 \\ &= 64x^6y^{10} \end{aligned}$$

$$\begin{aligned} 6. & (xy)^{-2}(30x^5)(xy^3) \\ &= \frac{(30x^5)x}{(xy)^2y^3} \\ &= \frac{30x^6}{x^2y^5} = \frac{30x^4}{y^5} \end{aligned}$$

$$\begin{aligned} 19. & 8x^6y(2x^{-1}y)^3 \\ &= 8x^6y(8x^{-3}y^3) \\ &= \frac{8x^6y \cdot 8 \cdot y^3}{x^3} \\ &= \frac{64x^6y^4}{x^3} = 64x^3y^4 \end{aligned}$$

PARTNER A (left side)	TEAM NAME	PARTNER B (right side)

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Simplify each expression. Partner A should do the left side and Partner B the right side. After completing each set, find matching answers. One will have a letter and the other a number. Write the letter in the matching numbered box at the bottom of the page.

SET 1										SET 1									
I. $5n^3 \cdot n^2$					E. $2n^4 \cdot 9n$					15. $3n^2 \cdot 6n^3$					5. $5n^8 \cdot 3n$				
T. $-3n^2(8n^{-5})$					S. $(-15n)(-n^8)$					1. $-2n^4(12n^{-7})$					9. $(-5n)(-n^4)$				
SET 2										SET 2									
O. $\frac{9x^7}{3x^2}$					H. $\frac{-30x^3}{5x^5}$					17. $\frac{10x^9}{2x}$					13. $\frac{-15x^8}{-5x^3}$				
U. $\frac{40x^7}{8x^{-1}}$					A. $\frac{-2x^{-5}}{-6x^{-2}}$					10. $\frac{4x^{-1}}{12x^2}$					2. $\frac{18x^{-5}}{-3x^{-3}}$				
SET 3										SET 3									
E. $(5cd^2)(6c^2d^3)$										20. $(6cd^3)(2c^4d)$									
Y. $4cd^7(3c^4d^{-3})$										7. $3c^2d^7(10cd^{-2})$									
T. $(9cd^5)(2c^3d)^2$										12. $(4c^4d^7)(3c^2d)^2$									
S. $36c^5d^3(cd^2)^3$										4. $36cd^4(c^2d)^3$									
SET 4										SET 4									
N. $\left(\frac{4at^5}{a^3t^{-1}}\right)^2$					A. $\left(\frac{3a^4t^{-2}}{a^2t}\right)^4$					3. $\left(\frac{9a^5t^{-1}}{at^5}\right)^2$					11. $\left(\frac{4at^4}{a^3t^{-2}}\right)^3$				
L. $\left(\frac{-2t^4}{at}\right)^6$					M. $\left(\frac{4a^3t^2}{9at^6}\right)^{-3}$					18. $\left(\frac{-2t^5}{at^2}\right)^4$					14. $\left(\frac{8a^4t}{27at^7}\right)^{-2}$				
SET 5										SET 5									
P. $(5x^6y)(2y^3)(3x^{-2}y^{-9})$										8. $(-x^9y^2)(10y^5)(3x^{-3}y^{-8})$									
N. $(4xy)^2(4xy^2)$										16. $(2xy)^5(2xy^5)$									
C. $(xy)^{-3}(-x^7y^2)(30x^2)$										6. $(xy)^{-2}(30x^5)(xy^{-3})$									
B. $x^9y^4(4x^{-1}y^2)^3$										19. $8x^6y(2x^{-1}y)^3$									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
T	H	A	T	S	P	E	C	I	A	L	S	O	M	E	B	U	N	N	Y