QUESTION

For all nonzero values of x and y, which of the following expressions is equivalent to $-\frac{36x^4y^3}{4xy}$?

CORRECT ANSWER

$-9x^3y^2$

DISTRACTORS

$-40x^3y^2$	$-32\,x^3y^2$
$-9x^5y^4$	$-9x^4y^3$

C03

QUESTION

Which of the following is equivalent to $(a^8)^{24}$?

CORRECT ANSWER

a^{192}

DISTRACTORS

$192a$	$32a$
$8a^{24}$	a^{32}

68G

QUESTION

Which of the following is equivalent to $(3x^3)^{-2}$?

CORRECT ANSWER

$$\frac{1}{9x^6}$$

DISTRACTORS

$\frac{1}{9x^9}$	$\frac{3}{x^6}$
$-6x^3$	$-9x^6$

60E

QUESTION

For any nonzero value of y, $(y^{-5})^3 = ?$

CORRECT ANSWER

$$\frac{1}{y^{15}}$$

DISTRACTORS

$\frac{1}{y^2}$	y^8
y^{15}	y^{125}

65D

QUESTION

$3x^5 \cdot 7x^9$ is equivalent to:

CORRECT ANSWER

$21x^{14}$

DISTRACTORS

$10x^4$	$10x^{14}$
$10x^{45}$	$21x^{45}$

67F

QUESTION

For all x, $2(-3x)^2$ is equivalent to:

CORRECT ANSWER

$18x^2$

DISTRACTORS

$-36x^2$	$-18x^2$
$-6x^2$	$36x^2$

57C

QUESTION

For all positive values of s, t, and h, which of the following is equivalent to $\frac{(s^2)^3 t^2 (t)^3}{h^{-2}}$?

CORRECT ANSWER

$s^6 t^5 h^2$

DISTRACTORS

$s^5 t^6 h^2$	$s^6 t^6 h^2$
$\frac{s^5 t^6}{h^2}$	$\frac{s^6 t^5}{h^2}$

57C

QUESTION

Which of the following expressions is equivalent to $\frac{(3x)^2}{x^5}$?

CORRECT ANSWER

$\frac{9}{x^3}$

DISTRACTORS

$\frac{3}{x^3}$	$\frac{6}{x^3}$
$3x^7$	$6x^7$

72C

QUESTION

$4b^8 \cdot 5b^3$ is equivalent to:

CORRECT ANSWER

$20b^{11}$

DISTRACTORS

$9b^5$	$9b^{11}$
$9b^{24}$	$20b^{24}$

71H

QUESTION

For all positive real numbers x, which of the following expressions is equivalent to $\frac{\left(\frac{x^{24}}{x^6}\right)}{\left(\frac{1}{x^2}\right)}$?

CORRECT ANSWER

x^{20}

DISTRACTORS

x^2	x^8
x^{12}	x^{16}

72E

QUESTION

For nonzero values of x and y, which of the following expressions is equivalent to $-\frac{18x^3y^2}{3xy}$?

CORRECT ANSWER

$-6x^2y$

DISTRACTORS

$-6x^3y^2$	$-6x^4y^3$
$-15x^2y$	$-21x^2y$

72E

QUESTION

$3x^9 \cdot 5x^9$ is equivalent to:

CORRECT ANSWER

$15x^{18}$

DISTRACTORS

$8x^{18}$	$8x^{81}$
$15x^9$	$15x^{81}$

72F

QUESTION

Which of the following expressions is equivalent to $(x^5y^3z^2)(x^4y^3z^6)$ for all real values of x, y, and z?

CORRECT ANSWER

$x^9y^6z^8$

DISTRACTORS

$x^9y^9z^8$	$x^{20}y^6z^8$
$x^{20}y^9z^{12}$	$x^{21}y^6z^{12}$

B04

QUESTION

For all $a > 0$, which of the following expressions is equal to a^{-2} ?

CORRECT ANSWER

$\frac{1}{a^2}$

DISTRACTORS

$-2a$	$-a^2$
$\frac{1}{2a}$	$\frac{1}{\sqrt{a}}$

74C

QUESTION

Which of the following expressions is equivalent to $(3+x)^{-100}$?

CORRECT ANSWER

$$\frac{1}{(3+x)^{100}}$$

DISTRACTORS

$-3^{100}-x^{100}$	$-300-100x$
$\frac{1}{3^{100}}+\frac{1}{x^{100}}$	$\frac{1}{(3x)^{100}}$

A11

QUESTION

Whenever x and y are nonzero, $\frac{(8x^5y^4)(6x^{13}y^3)}{16x^6y^{14}}=?$

CORRECT ANSWER

$$\frac{3x^{12}}{y^7}$$

DISTRACTORS

$3x^3y^2$	$\frac{3x^3}{y^2}$
$\frac{3x^6}{16y^{21}}$	$\frac{3x^{59}}{y^2}$

73G

QUESTION

Which of the following is equivalent to $(a^3)^{21}$?

CORRECT ANSWER

a^{63}

DISTRACTORS

$63a$	$24a$
$3a^{21}$	a^{24}

A09