



Powers, Roots, and Exponents

- 1** Find the answer when these terms are multiplied

$$(y^1) \cdot (y^3)$$

A y^4	B y^2	C y^9
D y^7	E y	F y^6

- 2** Find the answer when these terms are multiplied

$$c^3 \cdot c^3$$

A c^7	B c^6
C c^{60}	D c^5

- 3** Find the answer when these terms are multiplied

$$6^3 \cdot 6^3$$

A 6^0	B 6^5
C 6^{60}	D 6^6

- 4** Use the power of a product rule to write this as a single power of a product.

$$2^3 \cdot 3^3$$

A $(6)^4$	B $(6)^3$
C $(6)^6$	D $(5)^3$

- 5** Find the answer when these terms are divided

$$\frac{b^5}{b^3}$$

A b^4	B 1	C b
D b^0	E b^2	F b^3

- 6** Find the answer when these terms are divided

$$\frac{x^{-11}}{x^{-7}}$$

A x^3	B x^2
C x	D x^5
E x^{-4}	F x^{-10}

- 7** Find the answer when these terms are divided

$$\frac{r^{-5}}{r^3}$$

A r^{-2}	B r^0	C r^{-9}
D r^9	E r^{-5}	F r^{-8}

- 8** Find the answer when these terms are divided

$$\frac{x^{-3}}{x^2}$$

A $\frac{1}{x^2}$	B $\frac{1}{x^6}$	C $\frac{1}{x^8}$
D $\frac{1}{x^3}$	E $\frac{1}{x^4}$	F $\frac{1}{x^5}$



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- 9** Find the answer when these terms are divided

$$\frac{p^{-5}}{p^{-1}}$$

A $\frac{1}{p^5}$	B $\frac{1}{p^4}$	C $\frac{1}{p^3}$
D $\frac{1}{p}$	E $\frac{1}{p^7}$	F $\frac{1}{p^2}$

- 10** Find the answer when these terms are divided

$$\frac{x^2}{x^3}$$

A $\frac{1}{x^3}$	B $\frac{1}{x^4}$	C $\frac{1}{x^2}$
D $\frac{1}{x}$	E 1	F x^0

- 11** Find the answer when this term is raised to its exponent

$$(c^3)^3$$

A c^9	B c^6
C c^7	D c^{90}

- 12** Find the answer when this term is raised to its exponent

$$(11^3)^4$$

A 11^{10}	B 11^{12}	C 11^7
D 11	E 11^{11}	

- 13** Find the answer when this term is raised to its exponent

$$(14^3)^2$$

A 14^6	B 14^0
C 14^5	D 14^{600}

- 14** Use the power of a product rule to write this as a single power of a product.

$$6^4 \cdot 3^4$$

A $(6 \cdot 3)^5$	B $(9)^4$
C $(6 \cdot 3)^4$	D $(6 \cdot 3)^8$

- 15** Use the power of a product rule to separate this into a product of powers.

$$(xq)^2$$

A $x^4 \cdot q^4$	B $x \cdot q^2$
C $x^2 + q^2$	D $x^2 \cdot q$
E $x^2 \cdot q^2$	

- 16** Use the power of a product rule to write this as a single power of a product.

$$q^2 \cdot x^2$$

A $(q + x)^2$	B $(qx)^4$
C $(qx)^3$	D $(qx)^2$



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- 17** Use the power of a product rule to write this as a single power of a product.

$$\left(\frac{4}{5}\right)^4 \cdot \left(\frac{1}{5}\right)^4$$

A $\left(\frac{4}{5} \cdot \frac{1}{5}\right)^5$	B $\left(\frac{4}{5} \cdot \frac{1}{5}\right)^4$
C $\left(\frac{4}{5} \cdot \frac{1}{5}\right)^8$	D $\left(\frac{4}{5} + \frac{1}{5}\right)^4$

- 18** Use the power of a product rule to separate this into a product of powers.

$$(6 \cdot 5)^4$$

A $6^8 \cdot 5^8$	B $6^4 \cdot 5$
C $6^4 \cdot 5^4$	D $6^4 + 5^4$
E $6 \cdot 5^4$	

- 19** Use the power of a product rule to separate this into a product of powers.

$$(35)^3$$

A $5^3 + 7^3$	B $5^6 \cdot 7^6$
C $5^3 \cdot 7^3$	D $5^3 \cdot 7$
E $5 \cdot 7^3$	

- 20** Find the answer when this fraction is raised to its exponent

$$\left(\frac{5}{2}\right)^2$$

A $\frac{125}{7}$	B $\frac{25}{4}$	C $\frac{5}{7}$
D $\frac{1}{8}$	E $\frac{625}{4}$	F $\frac{125}{4}$

- 21** Find the square root of the given perfect square

$$\sqrt{9}$$

A 1	B 36	C 3
D 4	E 64	F 2

- 22** Find the integer that can be squared to give the perfect square shown

$$?^2 = 36$$

A 1,600	B 2	C 8
D 9	E 4	F 6

- 23** Simplify the radical

$$\sqrt{16}$$

A 5	B 4	C 1
D 3	E 6	



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- 24** Find the best approximation of the given square root

$$\sqrt{110}$$

A 10.5	B 8.3	C 9.8
D 11.3	E 12.7	F 9

- 25** What is a good approximation for the second square root?

$$\sqrt{36} = 6$$

$$\sqrt{38} \approx ?$$

A 8.6	B 5.4	C 3
D 3.8	E 9.4	F 6.2

- 26** Approximate the value of 'c' in this equation

$$36 + 36 = c^2$$

A $c = 8.5$	B $c = 6.8$
C $c = 10.2$	D $c = 1$
E $c = 5.1$	F $c = 9.3$

- 27** Approximate the value of 'c' in this equation

$$8^2 + 12^2 = c^2$$

A $c = 13.6$	B $c = 15.3$
C $c = 14.4$	D $c = 17.8$
E $c = 11.9$	F $c = 11.1$

- 28** Find the answer when this number is raised to its exponent

$$(-6)^{-3}$$

A $\frac{-1}{18}$	B $\frac{-1}{216}$	C $\frac{-1}{36}$
D $\frac{-1}{9}$	E $\frac{1}{1296}$	F 9

- 29** Find the answer when this number is raised to its exponent

$$5^{-3}$$

A $\frac{1}{8}$	B $\frac{1}{125}$
C 122	D $\frac{1}{15}$
E $\frac{1}{128}$	F 128

- 30** Find the answer when this number is raised to its exponent

$$(-12)^2$$

A 1	B 147
C -24	D -1,728
E 144	F -12

- 31** Find the answer when these terms are multiplied

$$(n^5) \cdot (n^{-2})$$

A n^{-6}	B n^6	C n^3
D n^{-5}	E n^4	F n^0



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32 Find the answer when this fraction is raised to its exponent

$$\left(\frac{-11}{7}\right)^2$$

A $-1,331$	B $-\frac{1,331}{7}$
C $\frac{14,641}{7}$	D $-\frac{11}{9}$
E $\frac{121}{49}$	F 1

33 Find the answer when these terms are multiplied

$$(d^{-4}) \cdot (d^{-2})$$

A d^5	B d^{-8}	C d^{-6}
D d^{-1}	E d^8	F d^4

34 Find the answer when these terms are multiplied

$$(p^2) \cdot (p^{-5})$$

A p	B p^{-2}	C p^{-6}
D p^{-3}	E p^9	F p^{-10}

35 Find the answer when these terms are divided

$$\frac{m^{-7}}{m^3}$$

A m^5	B m^{-4}
C m^{-13}	D m^{-7}
E m^{-10}	F m^2

36 What does this radical expression simplify to?

$$\frac{\sqrt{36^3}}{81}$$

A $\frac{184}{133}$	B $\frac{379}{43}$	C $\frac{8}{3}$
D $\frac{197}{13}$	E $\frac{127}{116}$	

37 What integer does this radical expression simplify to?

$$\frac{\sqrt[3]{81^3}}{27}$$

A 4	B 5	C 6
D 3	E 9	F 7

38 Simplify the radical.

$$3\sqrt{5-1}$$

A $9\sqrt{3}$	B $4\sqrt{3}$	C 9
D 8	E 6	