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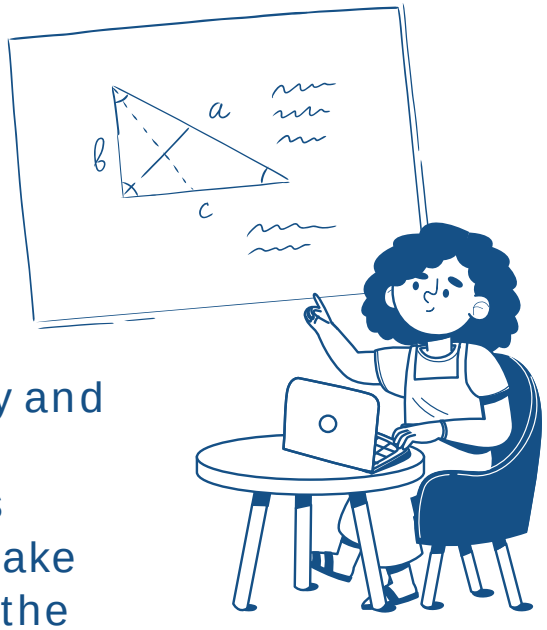

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Solving Exponential Equations

Name: _____

1 Exponents

Answer the questions below

Solve the following expressions.

1) $15^2 - 7^2$

2) $1^6 \square 8^2$

3) $10^2 \square 5^2$

4) $9^2 + 4^2$

5) $13^2 - 2^8$

6) $0^{11} \square 17^5$

7) $10^1 + 1^8$

8) $0^{12} - 5^3$

9) $3^4 + 0^5$

10) $7^2 \square 1^7$

11) $24^2 \square 8^2$

12) $1^5 \square 2^5$

Solving Exponential Equations

Name: _____

2 Equations with Exponents

Answer the questions below

Solve the following expressions.

1) $(0.4)^2 \square 10^2$

2) $9^2 + 0^{211}$

3) $(\frac{1}{2})^1 + (0.5)^1$

4) $0.6^2 \square (\frac{1}{10})^2$

5) $8^2 - 0.3^3$

6) $5^2 \square (\frac{1}{25})^2$

7) $(\frac{1}{5})^1 \square 5^0$

8) $4^3 \square (\frac{3}{4})^3$

9) $(1.4)^2 - (\frac{1}{3})^2$

10) $6^2 \square (\frac{1}{2})^2$

11) $(\frac{7}{11})^2 + (\frac{2}{11})^2$

12) $5^{12} \square 5^{11}$

Name: _____

3 Equations with Exponents

Answer the questions below

Write the following expressions using exponents.
For example, 8 □ 8 □ 8 is written as 8^3. You don't have to solve.

1) $45 \cdot 45 \cdot 45 \cdot 45$

2) $(-11) \cdot (-11) \cdot (-11) \cdot (-11) \cdot (-11) \cdot (-11) \cdot (-11)$

3) $\frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5} \cdot \frac{2}{5}$

4) $4.75 \cdot 4.75 \cdot 4.75 \cdot 4.75 \cdot 4.75 \cdot 4.75 \cdot 4.75 \cdot 4.75 \cdot 4.75 \cdot 4.75$

5) $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$

6) $(-0.7) \cdot (-0.7) \cdot (-0.7) \cdot (-0.7) \cdot (-0.7) \cdot (-0.7) \cdot (-0.7) \cdot (-0.7)$

7) $5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5$

8) $1.3 \cdot 1.3 \cdot 1.3 \cdot 1.3 \cdot 1.3 \cdot 1.3 \cdot 1.3 \cdot 1.3 \cdot 1.3$

9) $(-2.5) \cdot (-2.5) \cdot (-2.5) \cdot (-2.5) \cdot (-2.5) \cdot (-2.5) \cdot (-2.5)$

10) $4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$

11) $(-5) \cdot (-5) \cdot (-5) \cdot (-5) \cdot (-5)$

12) $(-\frac{2}{5}) \cdot (-\frac{2}{5}) \cdot (-\frac{2}{5}) \cdot (-\frac{2}{5}) \cdot (-\frac{2}{5}) \cdot (-\frac{2}{5}) \cdot (-\frac{2}{5}) \cdot (-\frac{2}{5})$

Name: _____

4 Equations with Exponents

Answer the questions below

Evaluate each expression.

1) $\frac{8^2}{4^4}$

2) $5^2 + 7 - (-3)^2$

3) $2^{-5} \cdot (-2)^2 - 8^{-1}$

4) $(-3)^{-3} \cdot 6^2$

5) $\frac{4^2 \cdot 2^{-6}}{2^7}$

6) $6^2 - (-4)^3$

7) $9^2 \cdot 3^{-4} + (-5)^4$

8) $7^3 + 2^{-1}$

9) $\frac{2^5 - 2^{-3}}{8^2}$

10) $6^2 + (-5)^3 - 8^2$

11) $3^5 - 4^{-1}$

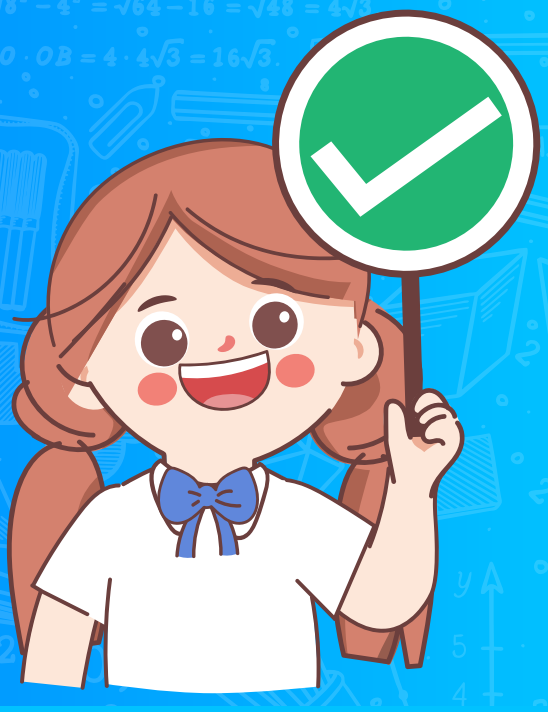
12) $4^{-2} \cdot 2^3 - 6^{-2}$

13) $6^2 \cdot (-9)^{-3}$

14) $3^3 \cdot 3^{-2} + 7^{-1} - 2^4$

15) $\frac{8^3}{2^6}$

Right Answers



Right Answers

1 Exponents

Answer the questions below

1) 176

2) 64

3) 4

4) 97

5) -87

6) 0

7) 11

8) -125

9) 81

10) 49

11) 9

12) $\frac{1}{32}$

Right Answers

2 Equations with Exponents

Answer the questions below

1) 16

2) 81

3) 1

4) 36

5) 63.973

6) $\frac{1}{25}$

7) $\frac{1}{5}$

8) $\frac{4096}{27}$

9) 1.84888889

10) 9

11) $\frac{53}{121}$

12) 5

Right Answers

3 Equations with Exponents

Answer the questions below

1) 45^4

2) $(-11)^7$

3) $\left(\frac{2}{5}\right)^6$

4) 4.75^{10}

5) 3^{14}

6) $(-0.7)^8$

7) 5^8

8) 1.3^9

9) $(-2.5)^7$

10) 4^{12}

11) $(-5)^5$

12) $\left(-\frac{2}{5}\right)^9$

Right Answers

4 Equations with Exponents

Answer the questions below

Evaluate each expression.

1) $\frac{8^2}{4^4}$

$\frac{1}{4}$

2) $5^2 + 7 - (-3)^2$

23

3) $2^{-5} \cdot (-2)^2 - 8^{-1}$

0

4) $(-3)^{-3} \cdot 6^2$

$-\frac{4}{3}$ or $-1\frac{1}{3}$

5) $\frac{4^2 \cdot 2^{-6}}{2^7}$

$\frac{1}{512}$

6) $6^2 - (-4)^3$

100

7) $9^2 \cdot 3^{-4} + (-5)^4$

626

8) $7^3 + 2^{-1}$

$\frac{687}{2}$ or $343\frac{1}{2}$

9) $\frac{2^5 - 2^{-3}}{8^2}$

$\frac{255}{512}$

10) $6^2 + (-5)^3 - 8^2$

−153

11) $3^5 - 4^{-1}$

$\frac{971}{4}$ or $242\frac{3}{4}$

12) $4^{-2} \cdot 2^3 - 6^{-2}$

$\frac{17}{36}$

13) $6^2 \cdot (-9)^{-3}$

$-\frac{4}{81}$

14) $3^3 \cdot 3^{-2} + 7^{-1} - 2^4$

$-\frac{90}{7}$ or $-12\frac{6}{7}$

15) $\frac{8^3}{2^6}$

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