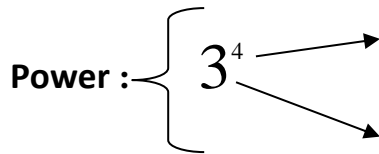


Powers, Square Roots and Order of Operations



The **power**, 3^4 , reads as _____ and is the **product**, _____ which has a value of _____.

Ex. 1. Write the product represented by each power. Then, evaluate.

a) 2^5 b) $\left(\frac{3}{7}\right)^2$ c) $\left(2\frac{1}{2}\right)^3$

Square Root : $\sqrt{16}$

The **square root**, $\sqrt{16}$, reads as _____ and is the number multiplied by itself or squared giving a value of 16 which in this case is _____.

Note: Squaring and taking the square root are **inverse** operations so $\sqrt{4^2} = \underline{\hspace{2cm}}$ and $(\sqrt{4})^2 = \underline{\hspace{2cm}}$.

Ex. 2. Evaluate.

a) $\sqrt{49}$ b) $\sqrt{400}$ c) $\sqrt{9^2}$

d) $(\sqrt{25})^2$ e) $(\sqrt{7})^2$ f) $\sqrt{39^2}$

Order of Operations (BEDMAS)

B	E	DM	AS
<i>Brackets</i>	<i>Exponents</i>	<i>Division and Multiplication, in order from left to right</i>	<i>Addition and Subtraction, in order from left to right</i>

Ex. 3. Evaluate using the rules for order of operations. **“BEDMAS”**

a) $35 - 2^2(10 - 14 \div 2)$

b) $(5 - 1)^3 - 5^2 + 1^4$

c) $\frac{2(6 - 3)^3}{48 \div (5 - 1)^2}$

d) $3[9 \times 5 - (9 + 3^4 \div 9)]$

e) $\frac{\sqrt{36 + 64}}{\sqrt{64} - \sqrt{36}}$

f) $\frac{17^2 - 8^2}{6^2 + 1^6 - 16 \div 2 \times 4}$

Rules for Homework

1. Copy the question down and follow the appropriate examples from this note.
2. Show **all** work by working down not across.
(no more than one "=" sign per line with the fraction line centred if applicable)
3. Simplify the final answer if possible.
4. Check your answers in the back of the textbook or with the answers provided. Mark correct answers with a checkmark and incorrect answers with a star. Go back and try to correct your solutions. If you can't find your error ask your teacher or a classmate for help.
5. Remember, **no calculators** are allowed. **YOU** are responsible for your own learning and are expected to maintain an organized binder with lessons and homework completed and checked on a daily basis.

Powers, Square Roots and Order of Operations Homework

1. Write the product represented by each power. Then, evaluate the expression.

a) 2^2 b) 2^3 c) 2^4 d) 3^2

e) 10^3 f) 10^4 g) 4^2 h) 4^3

i) 5^3 j) 5^5 k) $\left(\frac{3}{4}\right)^3$ l) $\left(1\frac{2}{3}\right)^3$

2. Circle the correct value of each of the following numerical expressions.

a) $20 - 10 \times 2$ A. 20 B. 0 b) $\sqrt{100 - 36}$ A. 8 B. 4

3. Evaluate using the rules for order of operations. **Complete on lined paper.**

a) $(3 + 6 \div 3)^2$ b) $4(2^3 - 3 \times 2)$ c) $[(8 + 6 \div 3) - 5]^2$

d) $2(3^2 + 1) \div 5$ e) $(9 + 1)^3 \div (3^2 + 1)$ f) $4[(32 - 5^2) - (2^3 - 1)]$

g) $\frac{\sqrt{25 - 9}}{\sqrt{25} - \sqrt{9}}$ h) $\sqrt{144} - \sqrt{121} + \sqrt{1}$ i) $\frac{\sqrt{8100}}{(\sqrt{71})^2 - \sqrt{66^2}}$

j) $\frac{5 + 2 \times 2^3}{\sqrt{8 \times 7 - 7}}$ k) $\frac{6 \times (3 + 4)}{2 + 3 \times 4}$ l) $\frac{4(17 - 5)}{1 + 45 \div 3 \div 3}$

Answers:

1a) 4 b) 8 c) 16 d) 9 e) 1000 f) 10 000 g) 16 h) 64 i) 125 j) 3 125 k) $\frac{27}{64}$ l) $\frac{125}{27}$ or $4\frac{17}{27}$

2a) 0 b) 8

3a) 25 b) 8 c) 25 d) 4 e) 100 f) 0 g) 2 h) 2 i) 18 j) 3 k) 3 l) 8

Working With Decimals

Scientific Notation: is a way of writing a number given in **standard form** as a decimal between 1 and 10, multiplied by a power of 10

$$"18\ 000 = 1.8 \times 10^4"$$

Ex. 1 Express in scientific notation.

a) 3 500 b) 765 010

Ex. 2. Express in standard form.

a) 1.25×10^2 b) 2.096×10^6

Rounding Decimals:

Ex. 3. Round to the nearest whole number (unit).

a) 4.5 b) 141.48

Ex. 4. Round to the nearest tenth. (1 decimal place)

a) 6.32 b) 18.986

Adding and Subtracting Decimals:

Ex. 5. Evaluate exactly. *Rewrite the question vertically with the decimal places lined up.

a) $4.9 + 7.48 + 6.96 =$

b) $8.3 - 2.91 =$

Multiplying Decimals:

Ex. 6. Determine the product. Round to the nearest hundredth (2 decimal places) if necessary.

*The product has the total number of decimal places of all decimal factors.

a) $2.4 \times 8.6 =$

b) $4.6 \times 0.01 =$

c) $3.93 \times 0.61 =$

Dividing Decimals:

Ex. 7. Determine the quotient using long division. Round to the nearest hundredth if necessary.

***Rewrite the quotient so you are dividing by a whole number before using long division.**

a) $0.48 \div 0.6$

b) $5.5 \div 0.45$

c) $0.0435 \div 0.007$

Order of Operations:

Ex. 8. Evaluate exactly.

a) $(2.5 + 68.7 \div 10^2) \times 10^3$

b) $\sqrt{0.09} + \sqrt{1.44} - \sqrt{0.0001}$

c) $0.7 \times 0.6 \div 0.4$

Ex. 9. Amy's hobby is chemistry. For one experiment she used 3 litres of water and 3 empty beakers. She poured 0.7 litres of water into the first beaker and twice that amount into the second. Choose and use one of the expressions below that will correctly determine the amount of water left for the third beaker.

i) $3 - 0.7 + 2 \times 0.7$

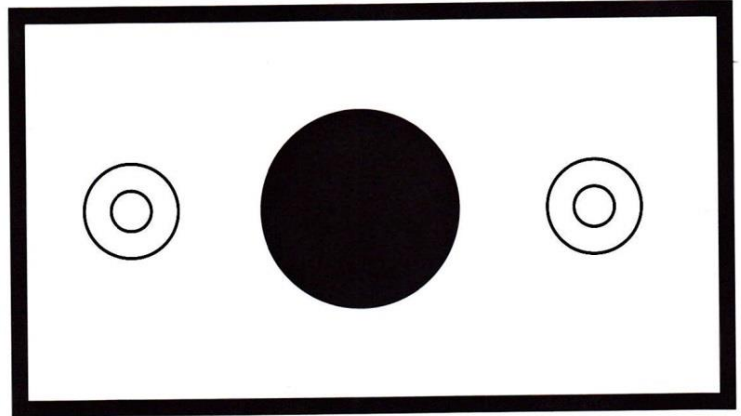
or

ii) $3 - (0.7 + 2 \times 0.7)$

What Is the Title?

TO DECODE THE TITLE
OF THIS PICTURE:

Do each exercise and find your answer in the appropriate answer column. Notice the symbol next to the answer. Each time this symbol appears in the code, write the letter of the exercise above it.



CODED TITLE:

zz ¢¢ \$\$ \ \ ## == ?? *? * [] ¢¢ :: () <> ¢¢ ** // == @@ && [] <> xx // //
 !! == -- -- == @@ &&)(xx <> ++ == :: :: == || " " // zz][-- %% ¢¢ zz

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Answers for W – N:	
[]	67.66
& &	0.95
**	32.25
xx	36.63
)(0.5385
" "	2.508
	4.75
<>	0.98
::	2.8
%%	22.777
\ \	4.66
@@	13.6
??	63.86
][37.53
\$\$	0.5175
()	24.677

- | | |
|---|---------------------------------|
| (W) $7.2 + 16.6 + 8.45$ | (H) $32.067 - 9.29$ |
| (U) 4.18×0.6 | (P) 57.5×0.009 |
| (A) $0.33 + 33 + 3.3$ | (E) $90 - 26.14$ |
| (F) $7 \overline{)19.6}$ | (G) $4 \overline{)3.8}$ |
| (C) $38 \div 8$ | (N) $340 \div 25$ |
| (M) 0.83×0.12 | (D) $0.7 \times 0.6 \times 0.5$ |
| (T) $0.6 \overline{)3.24}$ | (V) $0.09 \overline{)1.863}$ |
| (O) $\frac{16.7}{0.5}$ | (B) $\frac{2.6}{0.16}$ |
| (I) $(2.5 + 0.187) \times 10$ | (L) $(100 - 19.2) \div 100$ |
| (S) The paper feed on a copying machine has room for a stack of paper 4.0 cm high. If 10 sheets of paper are 0.08 cm thick, how many sheets will fit? (HINT: How thick is 1 sheet?) | |

Answers for M – S:	
##	20.7
][12.7
!!	0.0996
<>	16.33
--	500
¢¢	33.4
\ \	320
==	26.87
zz	5.4
()	21.5
@@	5.9
[]	0.0876
> <	16.25
++	0.21
)(34.7
//	0.808

Working With Fractions

Adding and Subtracting Fractions:

- i) Convert all mixed numbers to improper fractions and give all whole numbers a denominator of 1.
- ii) Find the lowest common denominator, LCD.
- iii) Add or subtract the numerators only. Keep the denominator the same.
- iv) Reduce the final answer to lowest terms if possible. (Simplify.)

Ex. 1. Evaluate.

a) $\frac{2}{15} + \frac{1}{15}$

b) $2 - \frac{5}{8}$

c) $\frac{1}{3} - \frac{2}{9}$

d) $\frac{1}{3} + \frac{3}{4}$

e) $1\frac{7}{10} - \frac{1}{5}$

f) $2\frac{2}{3} + 2\frac{1}{2}$

Multiplying Fractions:

- i) Convert all mixed numbers to improper fractions and give all whole numbers a denominator of 1.
- ii) Reduce by dividing out common factors in both the numerator and denominator.
- iii) Multiply numerators and multiply denominators.
- iv) Reduce the final answer to lowest terms if necessary.

Ex. 2. Evaluate.

a) $\frac{3}{8} \times \frac{5}{6}$

b) $\frac{9}{14} \times \frac{7}{12}$

c) $1\frac{11}{14} \times 2\frac{1}{10}$

Dividing Fractions:

- i) Convert all mixed numbers to improper fractions and give all whole numbers a denominator of 1.
- ii) “Keep” the first fraction. “Change” the \div to \times . “Invert” the divisor. “Reduce”.
(Memory Aid: **KCI Raiders**)
- iii) Multiply numerators and multiply denominators.
- iv) Reduce the final answer to lowest terms if necessary.

Ex. 3. Evaluate.

a) $\frac{3}{10} \div 6$

b) $\frac{15}{44} \div \frac{10}{33}$

c) $1\frac{7}{8} \div 2\frac{11}{12}$

Order of Operations:

Ex. 4. Evaluate exactly.

a) $\frac{2}{3} \times 1\frac{3}{4} \div 14 \div \frac{5}{18}$

b) $1\frac{1}{2} - \frac{2}{5} \div \frac{1}{5} \left(\frac{3}{8} + \frac{1}{8} \right)^2 + \frac{2}{3}$

HW: #1, 2

#3, 4, 5 on lined paper **Remember to follow the “Rules for Homework”

Working With Fractions Homework

Note: #3,4 and 5 are to be completed on lined paper.

1. Evaluate.

a) $\frac{2}{9} + \frac{5}{9}$

b) $\frac{1}{3} + \frac{1}{9}$

c) $\frac{1}{3} + \frac{5}{12}$

d) $\frac{14}{15} - \frac{7}{15}$

e) $\frac{5}{6} - \frac{3}{8}$

f) $\frac{1}{3} - \frac{1}{6}$

g) $\frac{4}{3} - \frac{2}{11}$

h) $\frac{8}{15} - \frac{1}{16}$

i) $\frac{14}{5} - \frac{5}{7}$

2. Evaluate.

a) $\frac{3}{4} \times \frac{7}{10}$

b) $\frac{3}{4} \times \frac{8}{15}$

c) $\frac{2}{3} \times \frac{9}{11}$

d) $\frac{2}{11} \div \frac{3}{5}$

e) $\frac{3}{4} \div \frac{7}{8}$

f) $\frac{5}{8} \div \frac{13}{16}$

g) $\frac{3}{5} \times \frac{3}{5}$

h) $\frac{5}{8} \div \frac{1}{4}$

i) $\frac{8}{9} \times \frac{3}{8}$

3. Evaluate.

a) $4\frac{1}{2} + 8\frac{1}{6}$

b) $1\frac{4}{5} + 6\frac{2}{3}$

c) $3\frac{1}{2} - 1\frac{1}{5}$

d) $8\frac{1}{4} - 2\frac{1}{2}$

4. Evaluate.

a) $2\frac{1}{6} \times 4\frac{2}{3}$

b) $4\frac{1}{8} \times 5\frac{1}{3}$

c) $2\frac{2}{5} \div \frac{4}{5}$

d) $8\frac{2}{3} \div 10\frac{1}{2}$

5. Evaluate using order of operations.

a) $\frac{1}{2} - \frac{1}{3} \times \frac{1}{4} + \frac{1}{5} \div \frac{1}{6}$

b) $\left(\frac{1}{2} - \frac{1}{3} \times \frac{1}{4} + \frac{1}{5}\right) \div \frac{1}{6}$

c) $\left(\frac{2}{3} + \frac{1}{6}\right)^2$

Answers

1. a) $\frac{7}{9}$ b) $\frac{4}{9}$ c) $\frac{3}{4}$ d) $\frac{7}{15}$ e) $\frac{11}{24}$ f) $\frac{1}{6}$ g) $\frac{38}{33}$ or $1\frac{5}{33}$ h) $\frac{113}{240}$ i) $\frac{73}{35}$ or $2\frac{3}{35}$

2. a) $\frac{21}{40}$ b) $\frac{2}{5}$ c) $\frac{6}{11}$ d) $\frac{10}{33}$ e) $\frac{6}{7}$ f) $\frac{10}{13}$ g) $\frac{9}{25}$ h) $\frac{5}{2}$ or $2\frac{1}{2}$ i) $\frac{1}{3}$

3. a) $\frac{38}{3}$ or $12\frac{2}{3}$ b) $\frac{127}{15}$ or $8\frac{7}{15}$ c) $\frac{23}{10}$ or $2\frac{3}{10}$ d) $\frac{23}{4}$ or $5\frac{3}{4}$

4. a) $\frac{91}{9}$ or $10\frac{1}{9}$ b) 22 c) 3 d) $\frac{52}{63}$

5. a) $\frac{97}{60}$ or $1\frac{37}{60}$ b) $\frac{37}{10}$ or $3\frac{7}{10}$ c) $\frac{25}{36}$

Ratios and Percent

Warm-up:

1. Evaluate.

a) $2\frac{1}{6} - 1\frac{3}{8}$

b) $16\frac{1}{2} \div \frac{11}{24}$

c) $\frac{8}{39} \times 2\frac{11}{12} \div 2\frac{4}{13} \div 7$

d) $\frac{5}{6} - \frac{1}{4} \times \frac{2}{5}$

e) $\left(\frac{3}{5} - \frac{1}{3}\right)^2 \div \left(1 - \frac{1}{5}\right)^3$

f) $(12 \div 1.2 - \sqrt{81}) - 0.6 \times 0.9$

2. Jack made a backyard patio area out of square patio stones that are $1\frac{1}{2}$ ft by $1\frac{1}{2}$ ft.

The area of his patio is $175\frac{1}{2}$ sq ft and the length is $19\frac{1}{2}$ ft.

a) Determine the width of the patio. b) Determine the number of patio stones he used.

Review of Ratios:

Ex. 1. Write each comparison as a ratio in lowest terms.

- a) 4:16 b) $\frac{12}{64}$ c) 9 : 27 : 3 d) 12 s to 1 min e) 75 cm to 1 m

Ex. 2. Write the missing term(s) for each.

- a) $17 : 25 = \underline{\quad} : 100$ b) $\frac{12}{18} = \frac{2}{\underline{\quad}}$ c) $\underline{\quad} : 6 : 5 = 6 : 36 : \underline{\quad}$

Review of Percent: Percent means out of _____.

Ex. 1. Write each percent as a fraction in lowest terms. **Ex. 2.** Write each fraction as a percent.

- a) 15 % b) 120 % c) $5\frac{1}{2}\%$ a) $\frac{3}{50}$ b) $\frac{63}{70}$ c) $1\frac{3}{20}$

Ex. 3. Calculate each percent to one decimal place.

- a) 6% of 84 b) 75% of 55

Ex. 4. Write each decimal as a percent.

- a) 0.344 b) 1.6

Ratios and Percent Homework

1. Write each comparison as a ratio in lowest terms.

- a) 4: 8 b) 8: 20 c) 12 : 42 d) $\frac{30}{42}$
 e) 7 mm to 3 cm f) 25 m to 5 cm g) 15 s to 1 min

3. Write each percent as a fraction in lowest terms.

- a) 49 % b) 1 % c) $\frac{1}{2}$ % d) $7\frac{1}{2}$ %

5. Calculate each percent to one decimal place.

- a) 15% of 75 b) 150% of 60 c) $\frac{1}{2}$ % of 244

7. Evaluate.

- a) $0.32 + 3.9$ b) $15.4 - 3.91$ c) 0.6×1.1 d) $24 \div 1.2$

2. Write the missing term(s) for each.

- a) $2:5 = \underline{\hspace{1cm}}:10$ b) $\frac{4}{7} = \frac{8}{\hspace{1cm}}$ c) $\frac{5}{8} = \frac{15}{\hspace{1cm}}$

4. Write each fraction as a percent.

- a) $\frac{7}{100}$ b) $\frac{7}{50}$ c) $\frac{1}{4}$

6. Evaluate.

- a) $\frac{2}{5} \times \frac{9}{8}$ b) $\frac{3}{4} \div \frac{9}{10}$ c) $3\frac{1}{5} - 2\frac{1}{4}$

8. Express as a product and evaluate.

- a) 8^2 b) 5.2^3

9. John works part-time at a restaurant. On Friday he worked $3\frac{1}{4}$ h and on Saturday he worked $6\frac{1}{2}$ h.

How many hours did he work together?

10. Evaluate.

- a) $2\frac{5}{8} \times \frac{4}{11}$ b) $2\frac{3}{5} \times 3\frac{1}{3}$ c) $5\frac{3}{4} \div \frac{1}{2}$ d) $6\frac{2}{3} \div 2\frac{1}{6}$

11. Determine the missing value.

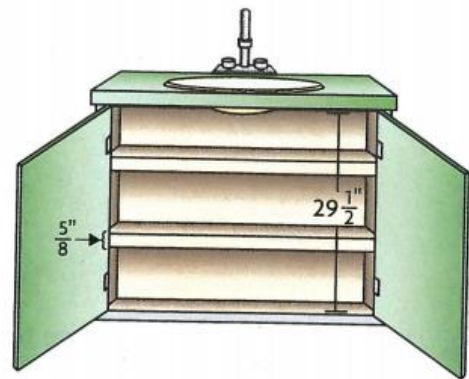
- a) $6\frac{3}{4} \times \square = 19\frac{1}{8}$ b) $\square \div 5\frac{1}{3} = 4\frac{2}{3}$

12. Evaluate.

- a) $\left(\frac{1}{2} - \frac{1}{3}\right) \times \left(\frac{1}{4} + \frac{1}{5} \div \frac{1}{6}\right)$ b) $\frac{5}{4} \times \frac{1}{2} - \frac{2}{3} \div 2 + \frac{1}{2}$

13. Melissa is adjusting the two removable shelves in her cupboard. The shelves are to be equally spaced in the cupboard. Choose and use the correct expression to determine exactly how much space is above or below each shelf.

$$29\frac{1}{2} \div 3 \quad \text{or} \quad \left(29\frac{1}{2} - 2 \times \frac{5}{8}\right) \div 3 \quad \text{or} \quad 29\frac{1}{2} - 2 \times \frac{5}{8} \div 3$$



Answers

1. a) 1:2 b) 2:5 c) 2:7 d) $\frac{5}{7}$ e) 7:30 f) 500:1 g) 1:4 2. a) 4 b) 14 c) 24 3. a) $\frac{49}{100}$ b) $\frac{1}{100}$ c) $\frac{1}{200}$ d) $\frac{3}{40}$

4. a) 7% b) 14% c) 25% 5. a) 11.3 b) 90 c) 1.2 6. a) $\frac{9}{20}$ b) $\frac{5}{6}$ c) $\frac{19}{20}$ 7. a) 4.22 b) 11.49 c) 0.66 d) 20

8. a) $8 \times 8 = 64$ b) $5.2 \times 5.2 \times 5.2 = 140.608$ 9. $9\frac{3}{4}$ h 10. a) $\frac{21}{22}$ b) $8\frac{2}{3}$ c) $11\frac{1}{2}$ d) $3\frac{1}{13}$ 11. a) $2\frac{5}{6}$ b) $24\frac{8}{9}$

12. a) $\frac{29}{120}$ b) $\frac{19}{24}$ 13. $9\frac{5}{12}$

Multiplying and Dividing Integers:

Recall: $(-)\times(-)=$	$(-)\times(+)=$	$(+)\times(-)=$	$(+)\times(+)=$
--------------------------------	-----------------	-----------------	-----------------

Ex. 3. Evaluate each product.

a) $-8\times(-5)$

b) $7\times(-9)$

c) $(-12)(6)$

d) $(10)(50)$

Recall: $(-)\div(-)=$	$(-)\div(+)=$	$(+)\div(-)=$	$(+)\div(+)=$
------------------------------	---------------	---------------	---------------

Ex. 4. Evaluate each quotient.

a) $-20\div(+10)$

b) $64\div(-8)$

c) $\frac{-155}{-5}$

d) $\frac{-16(-3)}{-2(4)}$

Order of Operations:

Ex. 5. Evaluate.

a) $(-4)^3$

b) -10^4

c) $(-2)^6$

d) $-(-5)^2$

e) $(-1)^{100}$

f) $(-3)(-5)(-2)$

g) $(5)(-15)\div(-3)(5)$

h) $(5)(-15)\div[(-3)(5)]$

i) $\frac{(-72)\div(-6)(-2)}{-(-2)^2}$

Working With Integers Homework

1. Evaluate by simplifying signs first.

a) $-3 + (-2)$ **b)** $2 + (-3)$ **c)** $-18 + 8$ **d)** $-6 + 4$ **e)** $-40 + (-15)$ **f)** $32 + (-46)$

g) $4 - (-3)$ **h)** $-5 - (-2)$ **i)** $5 - (-13)$ **j)** $-14 - (-7)$ **k)** $6 - (-6)$ **l)** $-43 - 4$

m) $3 - (-4) + 10$ **n)** $-7 + 2 - (-1)$ **o)** $-5 - (-3) + 4$ **p)** $-41 + (-32) + 15$

2. Calculate each product.

a) $(-3)(2)$ **b)** $(-4)(-9)$ **c)** $(4)(-3)$

d) $(-7)(-3)$ **e)** $(5)(4)$ **f)** $(-2)(7)$

3. Calculate each quotient.

a) $-18 \div (-6)$ **b)** $-24 \div 6$ **c)** $51 \div (-17)$

d) $-42 \div (-14)$ **e)** $60 \div (-12)$ **f)** $-30 \div (-15)$

4. Evaluate each of the following powers.

a) -5^3 **b)** $(-6)^2$ **c)** -4^2 **d)** $(-4)^3$ **e)** $-(-3)^4$ **f)** $-(-3)^3$

5. Evaluate.

a) $(-5)(-5)$ **b)** $-56 \div 8$ **c)** $\frac{-4(15)}{-10}$ **d)** $\frac{20}{2(-5)}$ **e)** $\frac{-10(6)}{-3(-2)}$

f) $(-2)(5)(-4)$ **g)** $(8)(4) \div (-2)$ **h)** $(4)(81) \div (-27)(-2)$ **i)** $64 \div [(-4)(-4)(-4)]$

Answers

1. **a)** -5 **b)** -1 **c)** -10 **d)** -2 **e)** -55 **f)** -14 **g)** 7 **h)** -3 **i)** 18 **j)** -7 **k)** 12 **l)** -47 **m)** 17 **n)** -4 **o)** 2 **p)** -58

2. **a)** -6 **b)** 36 **c)** -12 **d)** 21 **e)** 20 **f)** -14 3. **a)** 3 **b)** -4 **c)** -3 **d)** 3 **e)** -5 **f)** 2

4. **a)** -125 **b)** 36 **c)** -16 **d)** -64 **e)** -81 **f)** 27 5. **a)** 25 **b)** -7 **c)** 6 **d)** -2 **e)** -10 **f)** 40 **g)** -16 **h)** 24 **i)** -1

Working With Integers Continued

Warm up

1. Evaluate.

a) $(-3) + 7$

b) $11 - (-4)$

c) $(-15) + (-2)$

d) $-27 - (-19)$

e) $\frac{-12(-6)}{-3^2}$

f) $20 \div (-1)^5$

g) $-(-7) + (-9) - (+8) + (+10)$

Ex. 1. Evaluate by following the order of operations.

a) $-16 \times 2 - 8 \div (-4)$

b) $(5 - 7) - [3 - 2(-3)^2]$

c) $3(-5) - (-7)(-2)$

d) $\frac{(-4)^3 - (-2)^5}{-2(22 - 18)}$

e) $\frac{10 - 5 \times 6}{-2 + 39 \div (-13)}$

f) $-3(-2 - 3)^2 - (1 - 2)^3$

Ex. 2. Divide the sum of 7 and -16 by -3 .

Ex. 3. How much more is the sum of -4^2 and $(-2)^2$ than the product of 5 and -3 ?

Ex. 4. Evaluate if $a = -1$ and $b = -2$

a) $3a^2 - b^4$

b) $2(a - b)$

c) $a + (3a + b)^3$

HW: #1

#2, 3, 4 on lined paper **Remember to follow the "Rules for Homework"

Working With Integers Continued Homework

1. Evaluate by following the order of operations.

a) $(5 - 7) - (3 - 4)$

b) $(3)(2) - (3 + 5)$

c) $(4 - 3) - 2(3 - 4)$

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

e) $3(-2 + 4)^3 - 2(-4 + 1)^2$

f) $5(-2)^2 - 3(-1 - 2)^3$

g) $5(-2)^3$

h) $-4(-5) - (-3^3)$

i) $[-2(-1)^3]^6$

j) $-2^3 - (-10 + 5^2)$

k) $\frac{(-2)^2 - 22}{-3^2}$

l) $\frac{3^3 + 3(7)}{-2^4} + \frac{3(-5)^2}{-15}$

2. Find and explain the error in each solution.

Redo each solution correctly.

$$\begin{aligned} \text{a)} \quad & -4[5 - 2(-3)] \\ & = -4[3(-3)] \\ & = -4(-9) \\ & = 36 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad & -2(3)^2 \\ & = (-6)^2 \\ & = 36 \end{aligned}$$

3. Evaluate if $x = -2$ and $y = -1$

$$\text{a)} \quad x^2 + y^3 \quad \text{b)} \quad 2y^5 - (3 - x)^2 \quad \text{c)} \quad \frac{8(x + y^2)}{x^2}$$

4. Evaluate the expression $-y^2 - 4x^3$ if $x = -2$ and $y = 3$.

Answers

1. a) -1 b) -2 c) 3 d) -16 e) 6 f) 101 g) -40 h) 47 i) 64 j) -23 k) 2 l) -8

2. a) The error is in the second line. In square brackets you must multiply before you subtract., -44

b) The error is in the second line. Evaluate the power before you multiply., -18 3. a) 3 b) -27 c) -2 4. 23

PART B – Show all work on lined paper. No calculators are allowed.

1. Evaluate using BEDMAS.

a) $25 - 5 \times 3$ b) $17 - 2(16 \div 4 \times 2)$ c) $(21 \div 7 + 4) \div (11 - 2 \times 2)$ d) $\frac{3 \times (9 - 2) + 8 \div 4 + 2}{6(11 - 8) - (8 + 5)}$

2. Evaluate.

a) $29.01 - 21.14$ b) 2.65×3.7 c) $1.548 \div 0.43$ d) $4.1 + 0.7 \times 3 - 2.8$ e) $(0.2 - 0.02) \div (0.3)^2$

3. Evaluate.

a) $3\frac{1}{4} + 1\frac{3}{8}$ b) $5\frac{1}{4} - 3\frac{2}{3}$ c) $2\frac{1}{2} + 1\frac{2}{3} - \frac{5}{8}$ d) $\frac{3}{8} \times 2\frac{5}{6}$ e) $6\frac{2}{3} \div \frac{4}{5}$

f) $11 \div \frac{5}{8}$ g) $\frac{9}{10} \div 4$ h) $\left(\frac{4}{5}\right)\left(1\frac{1}{9}\right) \div 2\frac{2}{3}$ i) $\frac{5}{6} - 16\left(\frac{3}{4} - \frac{1}{2}\right)^3$

4. Convert to percents.

a) $\frac{7}{20}$ b) $\frac{12}{15}$ c) 0.85 d) 1.2

5. Convert to fractions in lowest terms.

a) 76% b) $6\frac{1}{3}\%$ c) 175% d) 0.15

6. Calculate. a) 20% of 45 b) 300% of 35

7. What percent of 25 is 8?

8. Simplify. a) 11 : 33 : 22 b) 5 min. to 35 s c) 1.9 km to 380 m

9. Evaluate.

a) $-1 - (-7) + 3 + (-18)$ b) $\frac{(-3)(-10)}{(-15)}$ c) $5(-4) - 2(-11)$ d) $2^3 - (2 - 7)^2$
e) $-6^2 - (-8)^2$ f) $\left(\frac{-16}{2}\right) - \left(\frac{14}{-7}\right)$ g) $\frac{30 \div 5(-2)}{1 - 2^2}$ h) $(-3)^3 - (-1)^4$

10. Divide the product of -6 and 8 by the sum of -4 and -8 .

11. Evaluate each expression when $x = -2$, $y = 3$ and $z = -1$.

a) $2x(y - z)$ b) $x^3 - 2xy - z^4$ c) $\sqrt{y^3 - xz}$

PART A - Answers

1. b 2. d 3. a 4. c 5. d 6. a 7. d 8. c 9. b

PART B - Answers

1. a) 10 b) 1 c) 1 d) 5 2. a) 7.87 b) 9.805 c) 3.6 d) 3.4 e) 2

3. a) $4\frac{5}{8}$ b) $1\frac{7}{12}$ c) $3\frac{13}{24}$ d) $1\frac{1}{16}$ e) $8\frac{1}{3}$ f) $17\frac{3}{5}$ g) $\frac{9}{40}$ h) $\frac{1}{3}$ i) $\frac{7}{12}$

4. a) 35% b) 80% c) 85% 5. a) $\frac{19}{25}$ b) $\frac{19}{300}$ c) $1\frac{3}{4}$ d) $\frac{3}{20}$ 6. a) 9 b) 105 7. 32%

8. a) 1:3:2 b) 60:7 c) 5:1 9. a) -9 b) -2 c) 2 d) -17 e) -100 f) -6 g) 4 h) -28

10. 4 11. a) -16 b) 3 c) 5