

MATH 125 - Prerequisite Review Worksheet

You need to be VERY competent at ALL these skills in order to succeed in this course. If you have very much difficulty with this worksheet, I recommend you take Math 402 before attempting this course. If you are just a *little* rusty at these skills, practice in the sections referenced.

Basic Operations (1.5, 1.6)

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| 1) a) $-72 + (-15) = \underline{\hspace{2cm}}$ | b) $-24 + 78 = \underline{\hspace{2cm}}$ |
| c) $14 - 23 = \underline{\hspace{2cm}}$ | d) $-12 - -18 = \underline{\hspace{2cm}}$ |
| e) $(12)(-3) = \underline{\hspace{2cm}}$ | f) $(-5)(-7) = \underline{\hspace{2cm}}$ |
| g) $(72)/(-3) = \underline{\hspace{2cm}}$ | h) $(-340)/(-10) = \underline{\hspace{2cm}}$ |

Prime factorization, reducing fractions, operations with fractions (1.1)
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- 2) Find the prime factorization of 396. $\underline{\hspace{2cm}}$
- 3) Reduce: a) $\frac{60}{102} = \underline{\hspace{2cm}}$ b) $\frac{55}{121} = \underline{\hspace{2cm}}$ c) $\frac{12}{192} = \underline{\hspace{2cm}}$
- 4)
- | | |
|---|---|
| a) $\frac{5}{14} + \frac{2}{21} = \underline{\hspace{2cm}}$ | b) $\frac{12}{60} \cdot \frac{5}{32} \cdot \frac{20}{3} = \underline{\hspace{2cm}}$ |
| c) $12 - \frac{8}{3} = \underline{\hspace{2cm}}$ | d) $\frac{18}{25} \div \frac{45}{2} = \underline{\hspace{2cm}}$ |
| e) $-2\frac{2}{9} \div 1\frac{2}{5} = \underline{\hspace{2cm}}$ | f) $3\frac{1}{3} - 5\frac{1}{6} = \underline{\hspace{2cm}}$ |
| g) $-15 \cdot \frac{2}{3} = \underline{\hspace{2cm}}$ | h) $\frac{5}{12} \div -10 = \underline{\hspace{2cm}}$ |

Exponents and Order of Operations (1.2)

- 5) a) $2^4 = \underline{\hspace{2cm}}$ b) $\left(\frac{2}{5}\right)^3 = \underline{\hspace{2cm}}$ c) $(-3)^3 = \underline{\hspace{2cm}}$ d) $(-3)^2 = \underline{\hspace{2cm}}$ e) $-3^2 = \underline{\hspace{2cm}}$
- 6) a) $13+4\cdot 2 = \underline{\hspace{2cm}}$ b) $250 \div 5 \cdot 2 = \underline{\hspace{2cm}}$ c) $20-4\cdot 3+5 = \underline{\hspace{2cm}}$
- d) $(18 - 2) \cdot 52 - 24 \div 12 = \underline{\hspace{2cm}}$ e) $6 \cdot 3 - 4 \div 2 + 6 \cdot 3 = \underline{\hspace{2cm}}$
- f) $\frac{6-3(1+5)}{6+2\cdot 10} = \underline{\hspace{2cm}}$ g) $(2-5)^2 + 4 - 7^2 = \underline{\hspace{2cm}}$

Real Number System (1.4)

$$\left\{-9, -\sqrt{5}, -\frac{3}{5}, 0, 1.5, 6, \sqrt{10}, 8, 9\frac{1}{4}\right\}$$

(7) List the numbers from the given set that are

- a) natural numbers _____ e) rational numbers _____
b) real numbers _____ f) non-negative numbers _____
c) whole numbers _____ g) irrational numbers _____
d) integers _____ h) negative integers _____

Expressions and Equations (1.3)

(8) Find the value for each of the following if $x=2$ and $y= -3$.

- a) $x+7$ _____ d) $x^2 - 3x + 1$ _____
b) $3x-7y$ _____ e) y^2 _____
c) $\frac{y+4}{2x}$ _____ f) $4y - 3x^2$ _____

(9) Expression or equation?

- a) $3x - 7y + 4.1x^3$ _____ b) $3x + 2(x+1)=3$ _____ c) $\frac{1}{x}$ _____

Translating words into expressions (1.3, 1.5, 1.6)

(10) Write each word phrase as an algebraic expression, using x as a variable.

- a) 12 added to a number _____ i) the product of 9 and 5 more than a number _____
b) a number times 3 _____ j) a number increased by 4 _____
c) 11 minus a number _____ k) 8 less than a number _____
d) a number divided by 14 _____ l) 12 subtracted from the product of a number and 8 ____
e) twice a number _____ m) the product of 3 and the sum of a number and 4 _____
f) the sum of a number and 9 _____ n) the quotient of 3 and the product of 9 and a number ____
g) the product of 7 and a number ____ o) one more than -4 times a number _____
h) 7 subtracted from a number _____ p) the difference between a number and 1 _____