

Math 205 Exam 2 Review

1) Form a valid conclusion from each of the set of premises.

(A) **Premises**

- (1) If Jason gets an A in Calculus, then he will graduate.
- (2) Jason did not graduate.

**Conclusion:**

(B) **Premises**

- (1) If tomorrow is Friday, then today is Thursday.
- (2) Tomorrow is Friday.

**Conclusion:**

2) Given the statement: If a person lives in New Jersey, then the person lives in the United States, write the inverse, converse, and contrapositive.

3) Each of four women received a bunch of flowers from her partner, for no particular reason. What type of flowers were given to each woman and who is her partner?

- 1) Wanda's partner, Gary, gave her a huge bouquet of her favorite blooms, which aren't roses.
- 2) Matt gave gladioli to his partner, who is not Tiffany.
- 3) Sheila received a dozen lilies, but not from Mark.

	Flowers				Partner			
	Tulips	Gladioli	Lilies	Roses	Matt	Mark	Dave	Gary
Wanda								
Tiffany								
Karen								
Sheila								

4) Find each of the following:

- A) Express  $243_{five}$  as a base ten number.
- B) Express 217 as a base four number.
- C) Determine the total number of units to which the base twelve pieces are equivalent:  
2 long-flats, 8 longs, 3 flats, 1 unit

5) Determine the minimum number of pieces for the base if the pieces in set M are combined with the pieces in set N. Then write numbers in positional numeration for sets M and N and the number for their sum in the given base.

Base Six

M: 3 flats, 4 longs, 5 units

N: 1 flat, 5 longs, 3 units

- 6) Determine the minimum number of pieces that need to be combined with set N to obtain set M for the given base. Then write numbers in positional numeration for sets M and N and the number for their difference in the given base.

Base Twelve

M: 7 flats, 9 longs, 6 units

N: 5 flats, 8 longs, 9 units

- 7) Write an algebraic rule for each of the following functions, where the domain is all whole numbers and  $x$  represents an element in the domain.

(A)  $f(x)$  is an element in the range, and each element in the domain is assigned to five more than half its value.

(B)  $H(x)$  is an element in the range, and each element in the domain is assigned to 16 less than twice its value.

(C)  $g(x)$  is an element in the range, and each element in the domain is assigned to 4 times its value.

(D) Evaluate  $f(6)$ ,  $H(2)$ , and  $g(7)$ .

- 8) Determine if the conclusion is valid or invalid based on the given premises. Justify your answer.

**Premises:** Some mallards are aggressive birds. Some black ducks are aggressive birds.

**Conclusion:** Some black ducks are mallards.

- 9) Write a "take away" story problem that fits naturally with the equation:  $42 - 17 = 25$

- 10) Perform the indicated operations:

$$\begin{array}{r} \text{A) } \quad 9 \ 5 \ 8_{\text{eleven}} \\ + \ T \ 7 \ 4_{\text{eleven}} \\ \hline \end{array}$$

$$\begin{array}{r} \text{B) } \quad 6 \ 4 \ 3 \ 2_{\text{seven}} \\ - \quad 5 \ 4 \ 6_{\text{seven}} \\ \hline \end{array}$$

- 11) Express 279 with the minimum number of base three pieces.

- 12) Write the following statements in "if-then" form.

A) All applications submitted after November 15 will not be considered.

B) Students in the upper classes will preregister early.