

Discrete Math Content Inventory Test -- Version 1

Discrete Math Content Inventory Test

Start Time _____ Finish Time _____

Diagnostic Teacher Assessments in Mathematics and Science--Middle School

Date _____

Please provide the following information about yourself:

Years teaching experience (0 if preservice teacher) _____
 Grade level(s) currently teaching _____
 Number of college math courses _____

Teaching certificate grade levels _____
 Teaching certificate content area(s) All
 Last 4 digits of Social Security # 21613

Directions for completing items:

Please record starting and finishing times in the spaces in the upper right-hand corner of this page.

Please answer all questions as completely as possible. Show all work in responding to items and briefly explain your thinking on all items. Let the test facilitator know when you are finished. Thank you very much for your time.

#	Item	Answer
1	Toss a fair coin, the probability of a heads is? a. a. 1 b. 1/2 c. 50-50 d. 50%	C.
2	How many subsets of a three element set are there? a. 3 b. 7 c. 8 d. 16 <i>1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3</i>	B.
3	Toss a fair coin three times, the probability of getting no heads is a. 1 b. 3 c. 1/8 d. 0	D.
4	Toss a fair coin three times, the probability of getting at least one head is a. 1 b. 3/8 c. 7/8 d. 1/8	D.

Discrete Math Content Inventory Test – Version 1

<p>5 There are three identical red marbles and three identical white marbles in an urn. You choose marbles from the urn and record the color, until the urn is empty. How many ways are there to select the marbles?</p> <p>6 marbles C_1</p>	<p>?</p> $6C_1 + 5C_1 + 4C_1 + 3C_1 + 2C_1 + 1C_1$
<p>6 A six sided die and an eight sided die are rolled, how many different ways can the difference of the up faces be 1?</p> <p>up 2</p>	<p>11 ways.</p>
<p>7 You ask people the month they were born. How many people must you ask to be certain that at least two of them were born in the same month?</p>	<p>13 people</p>
<p>8 You ask people the month they were born. How many people must you ask to be certain that at least three of them were born in the same month?</p>	<p>25 people</p>
<p>9 If $a_n = 3a_{n-1}$, and $a_1 = 2$, give an explicit formula for a_n.</p>	<p>I honestly don't remember. !! ^</p>

Discrete Math Content Inventory Test – Version 1

<p>10 If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? b. How many extensions are possible if the leading digit isn't a 9? c. How many extensions are possible if no digit is repeated?</p>	<p>a. 10! 10! 10! 10! b. 9! 10! 10! 10! c. 10! 9! 8! 7!</p>
<p>11 How many ways can you choose a 3 person committee from a department with 7 faculty members?</p>	<p>7C3</p>
<p>12 A six sided die and an eight sided die are rolled; Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p>	<p>I would prefer to be player 1 because you would win 2 x as much.</p>

Discrete Math Content Inventory Test – Version 1

Discrete Math Content Inventory Test

Diagnostic Teacher Assessments in Mathematics and Science--Middle School

Start Time _____ Finish Time _____
Date 1-20-07

Please provide the following information about yourself:

Years teaching experience (0 if preservice teacher) 10
Grade level(s) currently teaching 6th 7th
Number of college math courses 2

Teaching certificate grade levels 1-8
Teaching certificate content area(s) Elem 21 Math
Last 4 digits of Social Security # 4003

Directions for completing items:

Please record starting and finishing times in the spaces in the upper right-hand corner of this page.

Please answer all questions as completely as possible. Show all work in responding to items and briefly explain your thinking on all items.
Let the test facilitator know when you are finished. Thank you very much for your time.

#	Item	Answer
1	Toss a fair coin, the probability of a heads is? a. 1 b. 1/2 c. 50-50 d. 50%	B
2	How many subsets of a three element set are there? a. 3 b. 7 c. 8 d. 16	B
3	Toss a fair coin three times, the probability of getting no heads is a. 1 b. 3 c. 1/8 d. 0	C
4	Toss a fair coin three times, the probability of getting at least one head is a. 1 b. 3/8 c. 7/8 d. 1/8	B

Discrete Math Content Inventory Test – Version 1

<p>5 There are three identical red marbles and three identical white marbles in an urn. You choose marbles from the urn and record the color, until the urn is empty. How many ways are there to select the marbles?</p>	$\frac{{}^6C_1}{3} \quad \text{or} \quad 2C_1$
<p>6 A six sided die and an eight sided die are rolled, how many different ways can the difference of the up faces be 1?</p>	<p>11 ways</p>
<p>7 You ask people the month they were born. How many people must you ask to be certain that at least two of them were born in the same month?</p>	<p>13</p>
<p>8 You ask people the month they were born. How many people must you ask to be certain that at least three of them were born in the same month?</p>	<p>25</p>
<p>9 If $a_n = 3a_{n-1}$, and $a_1 = 2$, give an explicit formula for a_n.</p>	<p>?</p>

Discrete Math Content Inventory Test – Version 1

<p>10 If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? b. How many extensions are possible if the leading digit isn't a 9? c. How many extensions are possible if no digit is repeated?</p>	<p>a) 10! · 10! · 10! · 10! b) 9! · 10! · 10! · 10! c) 10! · 9! · 8! · 7!</p>
<p>11 How many ways can you choose a 3 person committee from a department with 7 faculty members? A, B, C, D, E, F, G</p>	<p>7C_3</p>
<p>12 A six sided die and an eight sided die are rolled; Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p> <p>Player 1 $\frac{6}{8} \cdot \frac{2}{4} = \frac{1}{2}$ $\frac{4}{8} \cdot \frac{2}{4} = \frac{1}{4}$ $\frac{2}{8} \cdot \frac{2}{4} = \frac{1}{8}$</p> <p>Player 2 $\frac{6}{8} \cdot \frac{1}{4} = \frac{3}{16}$ $\frac{4}{8} \cdot \frac{1}{4} = \frac{1}{8}$ $\frac{2}{8} \cdot \frac{1}{4} = \frac{1}{16}$</p> <p>4/8</p>	<p>Either one, because each player has 4/8 chance each to get what they need to win.</p>

Discrete Math Content Inventory Test – Version 1

Discrete Math Content Inventory Test

Diagnostic Teacher Assessments in Mathematics and Science--Middle School

Start Time _____ Finish Time _____

Date 1/20/07

Please provide the following information about yourself:

Years teaching experience (0 if preservice teacher) 10
 Grade level(s) currently teaching 4-12
 Number of college math courses 5

Teaching certificate grade levels 4-12
 Teaching certificate content area(s) MT/Information
 Last 4 digits of Social Security # 3218 Litany

Directions for completing items:

Please record starting and finishing times in the spaces in the upper right-hand corner of this page.

Please answer all questions as completely as possible. Show all work in responding to items and briefly explain your thinking on all items.

Let the test facilitator know when you are finished. Thank you very much for your time.

#	Item	Answer
1	Toss a fair coin, the probability of a heads is? a. $1/2$ b. $1/2$ c. $50-50$ d. 50%	
2	How many subsets of a three element set are there? a. 3 b. <u>7</u> c. 8 d. 16	<u>abc</u>
3	Toss a fair coin three times, the probability of getting no heads is a. 1 b. 3 c. <u>$1/8$</u> d. 0	
4	Toss a fair coin three times, the probability of getting at least one head is a. 1 b. <u>$3/8$</u> c. $7/8$ d. $1/8$	

Discrete Math Content Inventory Test – Version 1

<p>5 There are three identical red marbles and three identical white marbles in an urn. You choose marbles from the urn and record the color, until the urn is empty. How many ways are there to select the marbles?</p> <p align="center">$C(11,6)$</p>	<p align="center"> / / /</p>
<p>6 A six sided die and an eight sided die are rolled, how many different ways can the difference of the up faces be 1?</p> <p align="center">7</p>	<p align="center">1 2 3 4 5 6 1 2 3 4 5 6 7 8</p>
<p>7 You ask people the month they were born. How many people must you ask to be certain that at least two of them were born in the same month?</p> <p align="center">13</p>	
<p>8 You ask people the month they were born. How many people must you ask to be certain that at least three of them were born in the same month?</p> <p align="center">37</p>	
<p>9 If $a_n = 3a_{n-1}$, and $a_1 = 2$, give an explicit formula for a_k.</p>	

Discrete Math Content Inventory Test — Version 1

10	<p>If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? <i>a lot</i></p> <p>b. How many extensions are possible if the leading digit isn't a 9? <i>not as many</i></p> <p>c. How many extensions are possible if no digit is repeated? <i>256</i></p>	
11	<p>How many ways can you choose a 3 person committee from a department with 7 faculty members?</p> <p><i>$C(13,3)$</i></p>	
12	<p>A six sided die and an eight sided die are rolled; Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p> <p><i>doesn't matter</i></p>	<p>1 2 3 4 5 6 7 8 8</p> <p>1 2 3 4 5 6</p>

Discrete Math Content Inventory Test – Version I

<p>5 There are three identical red marbles and three identical white marbles in an urn. You choose marbles from the urn and record the color, until the urn is empty. How many ways are there to select the marbles?</p> <p>2^6</p>	
<p>6 A six sided die and an eight sided die are rolled, how many different ways can the difference of the up faces be 1?</p> <p>7-6 6-5 5-4 4-3 3-2</p> <p>6-5 11</p>	<p>11</p>
<p>7 You ask people the month they were born. How many people must you ask to be certain that at least two of them were born in the same month? Pigeon Hole</p> <p>13</p> <p>I remember something!</p>	<p>13</p>
<p>8 You ask people the month they were born. How many people must you ask to be certain that at least <u>three</u> of them were born in the same month?</p>	<p>37</p>
<p>9 If $a_n = 3a_{n-1}$, and $a_1 = 2$, give an explicit formula for a_n.</p> <p>$a_n = 3$ a_{n-1} a_n a_{n+1}</p>	<p>complete blank!</p> <p>!! call this a brain fag!</p>

Discrete Math Content Inventory Test – Version 1

<p>10 If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? 10^4</p> <p>b. How many extensions are possible if the leading digit isn't a 9? $9 \cdot 10 \cdot 10 \cdot 10 = 10^3 \cdot 9$</p> <p>c. How many extensions are possible if no digit is repeated? $10 \cdot 9 \cdot 8 \cdot 7 = \frac{10!}{6!}$</p>	
<p>11 How many ways can you choose a 3 person committee from a department with 7 faculty members?</p> <p>$7 \cdot 6 \cdot 5$</p> <p>$\frac{7!}{4!}$</p>	
<p>12 A six sided die and an eight sided die are rolled; Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p> <p>Same?</p>	

Discrete Math Content Inventory Test – Version 1

Discrete Math Content Inventory Test

Diagnostic Teacher Assessments in Mathematics and Science--Middle School

Start Time _____ Finish Time _____
Date _____

Please provide the following information about yourself:

Years teaching experience (0 if preservice teacher) 4
Grade level(s) currently teaching 9, 10, 11
Number of college math courses +25

Teaching certificate grade levels 7-12
Teaching certificate content area(s) Mathematics
Last 4 digits of Social Security # _____

Directions for completing items:

Please record starting and finishing times in the spaces in the upper right-hand corner of this page.

Please answer all questions as completely as possible. Show all work in responding to items and briefly explain your thinking on all items. Let the test facilitator know when you are finished. Thank you very much for your time.

#	Item	Answer
1	Toss a fair coin, the probability of a heads is? a. a. 1 b. $1/2$ c. 50-50 d. 50%	$1/2$
2	How many subsets of a three element set are there? a. 3 b. 7 c. 8 d. 16	7
3	Toss a fair coin three times, the probability of getting no heads is a. 1 b. 3 c. $1/8$ d. 0	$1/8$ HHH HHT HTH TTH THT TTH HTT
4	Toss a fair coin three times, the probability of getting at least one head is a. 1 b. $3/8$ c. $7/8$ d. $1/8$	c. $7/8$


Discrete Math Content Inventory Test – Version 1

<p>5 There are three identical red marbles and three identical white marbles in an urn. You choose marbles from the urn and record the color, until the urn is empty. How many ways are there to select the marbles?</p>	<p>RRR WWW $\binom{6}{2} \binom{4}{2} \binom{2}{2} = 15 \cdot 6 \cdot 1 = 90$</p>
<p>6 A six sided die and an eight sided die are rolled, how many different ways can the difference of the up faces be 1?</p>	<p> $\begin{matrix} 8-6 \\ 7-5 \\ 6-4 \\ 4-3 \\ 3-2 \\ 2-1 \end{matrix}$ $\begin{matrix} 8-7 \\ 7-6 \\ 6-5 \\ 5-4 \\ 4-3 \\ 3-2 \\ 2-1 \end{matrix}$ 14 </p>
<p>7 You ask people the month they were born. How many people must you ask to be certain that at least two of them were born in the same month?</p>	<p>13 Pigeon Hole Principle</p>
<p>8 You ask people the month they were born. How many people must you ask to be certain that at least three of them were born in the same month?</p>	<p>25</p>
<p>9 If $a_n = 3a_{n-1}$, and $a_1 = 2$, give an explicit formula for a_k.</p>	<p> $a_n = 3a_{n-1}$ $a_1 = 2$ $2 = 3a_0$ $a_0 = 2/3$ $a_k = 2 \cdot 3^{k-1}$ $(2/3) \cdot 3^k = 2$ </p>

Discrete Math Content Inventory Test – Version 1

<p>10 If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? b. How many extensions are possible if the leading digit isn't a 9? c. How many extensions are possible if no digit is repeated?</p>	<p>a. $10^4 = 10,000$ b. $9 \cdot 10^3 = 9,000$ c. $10 \cdot 9 \cdot 8 \cdot 7 = 5040$</p> <p style="text-align: right;">$\frac{5}{9}$ 5/9</p>
<p>11 How many ways can you choose a 3 person committee from a department with 7 faculty members?</p>	<p>$7 \cdot 6 \cdot 5 = 210$</p>
<p>12 A six sided die and an eight sided die are rolled; Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p>	<p>$6 \cdot 8 = 48$</p>

Discrete Math Content Inventory Test – Version 1

<p>5 There are three identical red marbles and three identical white marbles in an urn. You choose marbles from the urn and record the color, until the urn is empty. How many ways are there to select the marbles?</p>	<p>8! <i>combinations</i></p>
<p>6 A six sided die and an eight sided die are rolled, how many different ways can the difference of the up faces be 1?</p>	<p>8 13 <i>elimination</i> $6 \cdot 2$ </p>
<p>7 You ask people the month they were born. How many people must you ask to be certain that at least two of them were born in the same month?</p>	<p><i>Principle of Pigeon Holes</i> $12 + 1$</p>
<p>8 You ask people the month they were born. How many people must you ask to be certain that at least three of them were born in the same month?</p>	<p><i>Principle of Pigeon Holes</i> $24 + 1$</p>
<p>9 If $a_n = 3a_{n-1}$, and $a_1 = 2$, give an explicit formula for a_k.</p>	<p>$a_1 = 3a_0$ $a_0 = 2$ $a_2 = 3a_1$ $a_2 = 6$ $(3 \cdot 2)$ $a_3 = 18$ $(3 \cdot 3 \cdot 2)$ $a_4 = 54$ $(3 \cdot 3 \cdot 3 \cdot 2)$ <i>etc</i></p>

14

13

25

$$a_k = 3^{k-1} \cdot 2, \quad k > 1$$

Discrete Math Content Inventory Test – Version 1

<p>10 If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? 10^4 10000</p> <p>b. How many extensions are possible if the leading digit isn't a 9? $9 \cdot 10^3$</p> <p>c. How many extensions are possible if no digit is repeated? 5040</p>	<p>10000 $10^4 = 10000$</p> <p>10000 $1 \cdot 3 \cdot 2 \cdot 1 = 10^4$</p> <p>$9 \cdot 10^3$</p> <p>$10 \cdot 9 \cdot 8 \cdot 7$</p> <p>$90 \cdot 56 = 5040$</p>
<p>11 How many ways can you choose a 3 person committee from a department with 7 faculty members?</p> <p>$C(7, 3) = 210$</p>	<p>$C(7, 3)$</p> <p>$\frac{7!}{3!} = \frac{7 \cdot 6 \cdot 5}{1} = 210$</p>
<p>12 A six sided die and an eight sided die are rolled; Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p> <p><i>doesn't matter since # of winners</i></p>	<p>6 sided - 3 odd - 3 even</p> <p>8 sided - 4 odd - 4 even</p> <p>P1 - $4 \cdot 3 + 4 \cdot 3$</p> <p>P2 - $4 \cdot 3 + 4 \cdot 3$</p>

Discrete Math Content Inventory Test – Version 1

<p>10 If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? b. How many extensions are possible if the leading digit isn't a 9? c. How many extensions are possible if no digit is repeated?</p>	<p>a. 4 2500 $10^4 = 10000$ b. $9 \times 10 \times 10 \times 10 = 9000$ c. $10, 9, 8, 7 = 5040$</p> <p>$56 \times 90 = 5040$</p>
<p>11 How many ways can you choose a 3 person committee from a department with 7 faculty members?</p>	<p>$7 \times 6 \times 5$ $= 210$</p>
<p>12 A six sided die and an eight sided die are rolled; Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p> <p><i>Doesn't matter both are equally win. 24 ways to win each!</i></p>	<p> </p> <p> Player 1 odd: 2-2, 4-4, 6-6 even: 2-4, 2-6, 4-2, 4-6, 6-2, 6-4 </p> <p> Player 2 (1) 4, 4, 4, 4, 4, 4 (2) 4, 4, 4, 4, 4, 4 </p> <p> odd: $4 \times 3 = 12$ even: 24 wins </p> <p> 24 </p>

Discrete Math Content Inventory Test – Version 1

Discrete Math Content Inventory Test

Diagnostic Teacher Assessments in Mathematics and Science—Middle School

Start Time 11:07 Finish Time 11:13

Date 1/20/07

Please provide the following information about yourself:

Years teaching experience (0 if preservice teacher) 3

Teaching certificate grade levels HS

Grade level(s) currently teaching 9, 12

Teaching certificate content area(s) math

Number of college math courses not

Last 4 digits of Social Security # 4470

Directions for completing items:

Please record starting and finishing times in the spaces in the upper right-hand corner of this page.

Please answer all questions as completely as possible. Show all work in responding to items and briefly explain your thinking on all items.

Let the test facilitator know when you are finished. Thank you very much for your time.

#	Item	Answer
1	Toss a fair coin, the probability of a heads is? a. a. 1 b. $1/2$ c. 50-50 d. 50%	B
2	How many subsets of a three element set are there? a. 3 b. 7 c. 2^3 d. 16	C
3	Toss a fair coin three times, the probability of getting no heads is a. 1 b. 3 c. $1/8$ d. 0	C
4	Toss a fair coin three times, the probability of getting at least one head is a. 1 b. $3/8$ c. $7/8$ d. $1/8$	C

Discrete Math Content Inventory Test – Version 1

<p>10 If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? b. How many extensions are possible if the leading digit isn't a 9? c. How many extensions are possible if no digit is repeated?</p>	<p>a) 19000 b) 9,000 c) 10,9,8,7 = 90 · 56 = <u>5040</u></p>									
<p>11 How many ways can you choose a 3 person committee from a department with 7 faculty members?</p>	<p>7,6,5 210</p>									
<p>12 A six sided die and an eight sided die are rolled; Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>prob odd</th> <th>prob even</th> </tr> </thead> <tbody> <tr> <th>6</th> <td>$\frac{1}{2}$</td> <td>$\frac{1}{2}$</td> </tr> <tr> <th>8</th> <td>$\frac{1}{2}$</td> <td>$\frac{1}{2}$</td> </tr> </tbody> </table> <p style="text-align: center;">both odd = $\frac{1}{4}$ both even = $\frac{1}{4}$ one of each = $\frac{1}{2}$</p> <p style="text-align: center;">they are the same prob. $\frac{1}{2}$ either</p>		prob odd	prob even	6	$\frac{1}{2}$	$\frac{1}{2}$	8	$\frac{1}{2}$	$\frac{1}{2}$
	prob odd	prob even								
6	$\frac{1}{2}$	$\frac{1}{2}$								
8	$\frac{1}{2}$	$\frac{1}{2}$								

Discrete Math Content Inventory Test – Version 1

Discrete Math Content Inventory Test

Diagnostic Teacher Assessments in Mathematics and Science--Middle School

Start Time _____ Finish Time _____
Date _____

Please provide the following information about yourself:

Years teaching experience (0 if preservice teacher) _____ Teaching certificate grade levels _____
 Grade level(s) currently teaching _____ Teaching certificate content area(s) _____
 Number of college math courses _____ Last 4 digits of Social Security # _____

Directions for completing items:

Please record starting and finishing times in the spaces in the upper right-hand corner of this page.
 Please answer all questions as completely as possible. Show all work in responding to items and briefly explain your thinking on all items.
 Let the test facilitator know when you are finished. Thank you very much for your time.

#	Item	Answer
1	Toss a fair coin, the probability of a heads is? a. a. 1 b. $1/2$ c. 50-50 d. 50%	b
2	How many subsets of a three element set are there? a. 3 b. 7 c. 8 d. 16	7
3	Toss a fair coin three times, the probability of getting no heads is a. 1 b. 3 c. $1/8$ d. 0	c
4	Toss a fair coin three times, the probability of getting at least one head is a. 1 b. 3/8 c. $7/8$ d. $1/8$	<p style="margin: 0;">b</p> <p style="margin: 0; text-align: right;">H T T F H T</p> <p style="margin: 0;">c</p>

Discrete Math Content Inventory Test – Version 1

<p>5 There are three identical red marbles and three identical white marbles in an urn. You choose marbles from the urn and record the color, until the urn is empty. How many ways are there to select the marbles?</p>	
<p>6 A six sided die and an eight sided die are rolled, how many different ways can the difference of the up faces be 1?</p>	<p>9 ways.</p> <p> $\begin{array}{r} 6 \\ 8 \\ \hline 48 \end{array}$ $\begin{array}{r} 6 \\ 8 \\ \hline 5 \\ -5 \\ \hline 1 \\ -2 \\ \hline 3 \\ -2 \\ \hline 1 \\ -2 \\ \hline 5 \\ -7 \\ \hline 6 \end{array}$ $\begin{array}{r} 3 \\ 4 \\ \hline 2 \\ 3 \\ \hline 2 \\ 1 \end{array}$ </p>
<p>7 You ask people the month they were born. How many people must you ask to be certain that at least two of them were born in the same month?</p>	<p>13</p>
<p>8 You ask people the month they were born. How many people must you ask to be certain that at least three of them were born in the same month?</p>	<p>25</p>
<p>9 If $a_n = 3a_{n-1}$, and $a_1 = 2$, give an explicit formula for a_n.</p>	<p> $\begin{array}{r} 2 \\ 6 \\ 18 \\ 54 \end{array}$ $\begin{array}{r} 1 \\ 4 \\ 15 \end{array}$ $\begin{array}{r} 3^n - 1 \\ 3^2 - 1 = 2 \\ 3^3 - 1 = 7 \end{array}$ </p>

Discrete Math Content Inventory Test – Version 1

<p>10 If campus phone extensions have 4 digits</p> <p>a. How many extensions are possible? b. How many extensions are possible if the leading digit isn't a 9? c. How many extensions are possible if no digit is repeated?</p>	<p>4-2-1-0 10, 10, 10, 10 a) 10^4 b) 9, 10, 10, 10 c) 10, 9, 8, 7</p>
<p>11 How many ways can you choose a 3 person committee from a department with 7 faculty members?</p>	<p>$\binom{7}{3}$</p>
<p>12 A six sided die and an eight sided die are rolled. Player 1 "wins" when either both die are even, or both die are odd and Player 2 "wins" when one of the die is odd and one is even. Which player would you prefer to be, explain your answer.</p>	<p>1 2 3 4 5 6 1 2 3 4 5 6 7 8 12 odd 12 even 24 24 24</p>