

(C2-5.2a) Name:

## Homework Questions 2 – Factorial and Combination Notation

1. Find the values of these factorial notations, show your working out

a)  $7!$

5040
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c)  $\frac{5!}{3!}$

20
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b)  $4!$

24
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d)  $\frac{8!}{5!}$

336
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2. Find the values of these combination notations, show your working out

a)  ${}^4C_0$

1
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c)  ${}^5C_3$

10
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b)  ${}^7C_2$

21
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d)  ${}^6C_3$

20
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3. Find the value of these combination notations, show your working out

a)  $\binom{3}{1}$

3
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c)  $\binom{6}{4}$

15
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b)  $\binom{7}{5}$

21
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d)  $\binom{5}{3}$

10
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4. Prove that  ${}^6C_4 = \binom{6}{2}$

$$\frac{6!}{4!2!} = \frac{6!}{2!4!}$$

5. Write using combination notation Line 4 of Pascal's Triangle

$$\binom{4}{0} \quad \binom{4}{1} \quad \binom{4}{2} \quad \binom{4}{3} \quad \binom{4}{4}$$