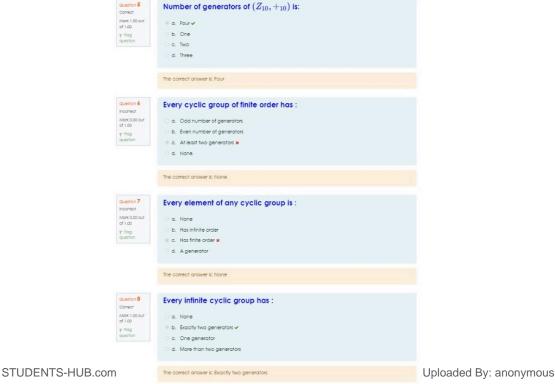
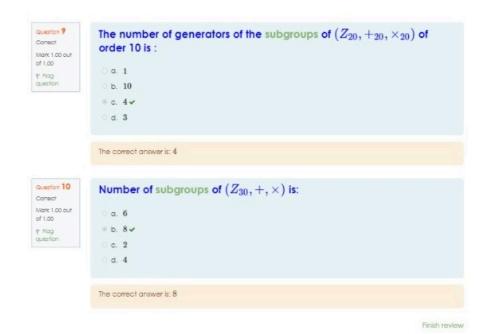


Every abelian group is:

Question 1

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Let G=<a> be cyclic of order 24:

- A) Find all subgroups of G.
- B) Find order of a^4 , a^7 , a^{15} .
- C) Find all generators of G.
- D) Find all elements of order 8.
- E) Find all subgroups of order 8.
- F) If $H \leq G$ of order 8, find all generators of H.

Let G=<a> be cyclic of order 30:

- A) Find all subgroups of G.
- B) Find order of a^4 , a^7 , a^{15} .
- C) Find all generators of G.
- D) Find all elements of order 10.
- E) Find all subgroups of order 10.
- F) If $H \leq G$ of order 10, find all generators of H.

del G = < a) be cyclir of order 30. A) All subgroups of C HI= (= y is a subgroup of order 1 Hz= e, a 15), 1 1 2 H3= (e, a', a') ", ", " 3 H5= 1e, a 1a12, a13, a243 , , 5 H6=de, a5, a10, a15, a20, a25) 3 5 6 H10=1 e, a3, a6, a9, -- , a279 , , 10 HIS = { e 102/104/10 1, 48, -- 1 a 28 3 " 15 H = G = 20) is a subgroup of order 30. B) | a4 | = 30 (4,30) = 15 $|a^{7}| = \frac{36}{9.65(7130)} = 30$ $|a^{15}| = \frac{30}{(15)30} = 2.$ e) a, a⁷, a", a¹³, a¹⁷, a¹⁹, a²³, a²⁹. d) a3, a9, a21, a27 e) H= Ye1a3, a6, a9, a12, ..., a27y only on f) H = C 1/010/10 10 21, 27.
STUDENTS AT B. COM 1 0 1 0 1 0 1 9 27.

A) 5: Math 337

A) 5: De cyclic of order 24 say (= La) Math 337 A) Find all subgroups of C-H= dez b a subgroup af order 1
H2= le, a 2 y " " order 2 H3= {e, a, a, a, b, y, y, y, 3 Hy=1e, a6, a12, a183, ", ", 4. H & = d e 1 (13, a6, a9, a12, a15, a18, a217) is aforder8 H 6 = 1 e, a4, a8, a12, a16, a207 is a subgroup of order H₁₂ = de, a², a', a', ..., a²²²) , , , , , , 12 H24 = 6 is asubgroup of order 24. B) | a4 | = 14 = 24 = 6. $|a| = \frac{24}{g.c.d(7124)} = 24.$ $|a^{15}| = \frac{24}{0.6d(24,15)} = 8.$ D'a3, a, a, a²¹

E) only one Le, a³, a⁶, a, a, a¹⁵, a¹⁸, a¹⁹ ENTSTRYBECOM als , 921.