Idle Heroes: PvP Mechanics

Free-Response Questions

2019 Idle Heroes: PvP Mechanics Free-Response Questions

Idle Heroes: PvP Mechanics
Section I
Time—45 minutes
3 Questions

Directions: Answer all three questions. The suggested time is about 15 minutes for answering each of the questions, which are worth 15 points each. Show all your work and reasoning in this booklet in the spaces provided after each part. **Certain question requires knowledge of hero abilities, you are free to open the game to look them up.**

1. A curious Idler pits a level 100 5-star Iceblink versus a level 80 4-star The Grey-Eyed. The values shown in the hero gallery (pictured above) are the starting in-battle parameters.

    (a) Assuming there are no other factors involved, calculate:
        i. The Grey-Eyed's Armor Mitigation. (2 points)

        ii. Iceblink's damage dealt in round one. (3 points)

    (b) Round one is finished after both heroes have attacked. When round two starts, would the damage of Iceblink's second attack be greater than, less than, or equal to the damage of his first attack? (1 point)

    ____ Greater than   ____ Less than   ____ Equal to

    Justify your answer. (4 points)

(c) Calculate the damage Iceblink deals in round three. (5 points)

2. An enthusiastic player is testing their cheese lineup. Among other heroes, it contains a 9-star Emily, a 6-star Destroyer, and a 10-star Aidan. (Relevant information pictured above).
The player decides to use Ice Monster (+11062 Attack, +20% Holy Damage, +10% Precision).

(a) Assuming the hero gallery stats are the base values, calculate Aidan's starting in-battle Attack. (2 points)

(b) As the fight begins, the enemy team starts attacking first. They perform three attacks, which result in the following:
i. First enemy attack kills Destroyer. Calculate Aidan's attack the moment after Destroyer died. (1 point)

ii. First enemy attack also lowered Emily's HP below 50%. Second enemy attack kills Emily. Calculate Aidan's attack the moment after Emily died. (1 point)

iii. Third enemy attack kills Aidan. Calculate Aidan's on-death passive damage to a Forest hero XYZ, who has 30% Damage Reduce and 35% Armor Mitigation. (4 points)

(c) After a couple of tests, the player equips the previously "artifact-less" Aidan with an artifact which has a single stat: [+90.0% Damage Against Priest]. Assuming the fight goes in a way that is described in question (b), what is Aidan's on-death passive damage to the enemy Ormus, who has 5% Damage Reduce and 35% Armor Mitigation? (6 points)

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	Karim	Horus
Attack:	230 000	120 000
Current HP:	3 500 000	10 000 000
Armor Mitigation:	--	31%
Precision:	0%	--
Block:	--	115%
Crit Damage:	30%	--
Armor Break:	25%	--
Damage Reduce:	--	35%
2nd Enable:	Lethal Fightback (When active or basic attack damage enemies with higher current HP than self, deals extra 12% damage.)	Shelter (Decreases Crit Damage received by 15%.)
Passive:	Basic Attack deals (130% of Attack) damage, heals self for (45% of the damage dealt) HP.	When blocks an attack, deals [20% of Attacker's Current HP (capped by 1000% of Horus's Attack)] damage against the attacker, heals self for (10% of the damage dealt) HP.

3. A person interested in Idle Heroes PvP Mechanics is studying a fight between Karim and Horus. The table above shows in-battle stats for both heroes when Karim attacks Horus with his Basic Attack.

   (a) Calculate the damage Horus takes from Karim's Basic attack if:
       i. Karim does not crit. (4 points)

ii. Karim crits. (6 points)

(b) Calculate:

i. The damage Horus deals to Karim when blocking his attack. (3 points)

ii. Healing done by Karim in (a) ii. and by Horus in (b) i. (2 points)

STOP
END OF SECTION I