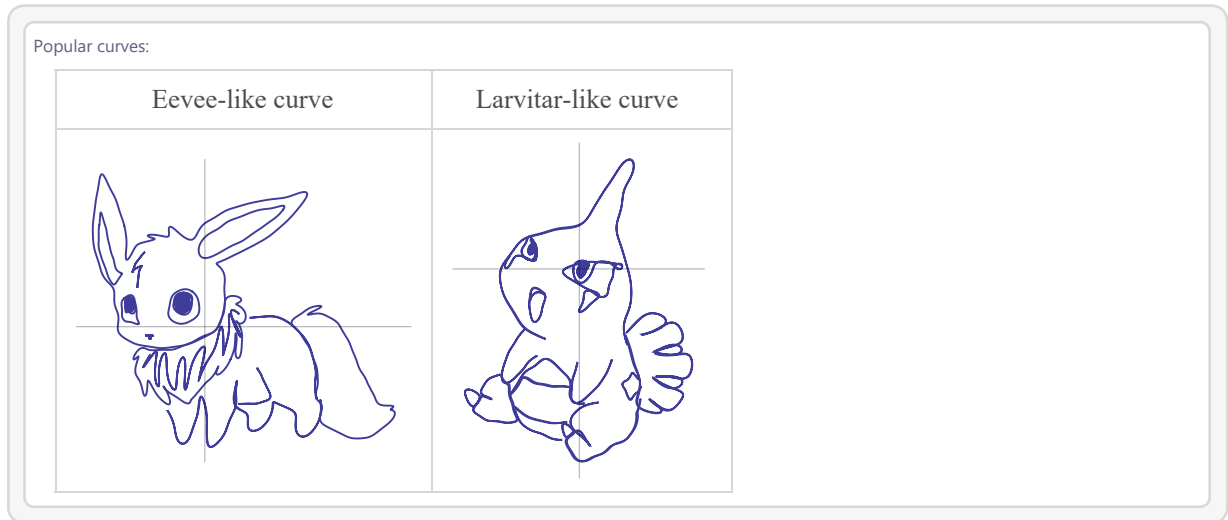


Pokémath: Group Work 12

Name _____,



Eevee, I choose you!

Team Cyclone has been defeated! We have found and returned their stash of stolen Pokémon®, money, and math assignments. Now, like each of you, I have one final battle against my rival to close out my Pokémon® adventure. Can you give me a hand in picking the best move?

The actual damage done by any Charge Move depends on the attack stat of my Eevee and the defense stat of my opponent.

Suppose my Eevee has attack stat 94.0457

Suppose I am battling my rival's Larvitar with defense stat 85.3524

1) My Eevee has Fast Move Quick Attack. I have filled in the damage for you.

a) Calculate the damage per turn (DPT) for quick attack and put it in the table below.

b) What are the units for DPT?

c) Calculate the energy per turn (EPT) for quick attack and put it in the table below.

d) What are the units for EPT?

Fast Move	power	damage	energy	duration	DPT	EPT
Quick Attack	5	3	7	2		

2) Charge Moves. There are four charge moves available for Eevee. I have filled in the table below, using the fact that the Ground type move Dig is super effective but lacks the STAB while the others have STAB but are not very effective against Rock. I have also filled in the values for Swift as an example.

a) Compute **average charge up time in turns** for each move. Round to the nearest hundredth. Check your answer for swift and then fill in the rest.

b) The units for energy cost are “energy” per “charge”. What are the units for average charge up time?

c) A cycle is the time it takes to charge the charge move and then use the charge move. So it is always average charge up time plus one. Compute cycle time for each move. Check your answer for swift and then fill in the rest.

d) During the charge up time, Eevee is doing damage with Quick Attack at the rate DPT. Fill in the average fast move damage (avg FM Damage during charge up). This is the damage done by Quick Attack during the charge up. Check your answer for swift and then fill in the rest.

e) What are the units for Avg FM damage during charge up?

f) The total damage in the cycle is the damage done by the fast move during charge up time (from part d) plus the damage done by the charge move on the final turn in the cycle. In the chart, I call it Avg Damage per cycle. Calculate it for each move. Check your answer for swift and then fill in the rest.

g) The overall damage rate is the Avg Damage per cycle divided by average cycle time. Calculate the overall damage rate for each move. Check your answer for swift and then fill in the rest.

h) What are the units of the overall damage rate?

Charge Move	Dig	Swift	Body Slam	Last Resort
Power	100	60	60	90
Damage	115	33	33	49
Energy Cost	80	55	35	55
Avg Charge up Time		15.71		
Avg Cycle Time		16.71		
Avg FM Damage during charge up		23.57		
Avg Damage per cycle		56.57		
Overall Damage Rate		3.38		

3) Which move has the highest overall damage rate? Which move has the lowest?

4) Is the highest overall damage rate always the best choice? Compare for example Body Slam and Last Resort.

5) Suppose my opponent is another normal type. Do you think that would change your decision? Explain in 2-3 sentences.