

BC Numeracy 10 Exam Practice – Graphing Data

For each situation below:

1. Plot the data on a graph.
2. Draw a reasonable line of best fit. (It does **not** need to touch every point but should pass through at least 2 points.)

Scenario 5

Cycling Distance vs. Calories Burned

A cyclist training for a charity race tracks how far each session covers and how many calories are burned. Hills, weather, and fatigue add variation — so the cyclist wants to know whether **distance alone is enough to predict calories burned**, or whether more data should be recorded.

Distance (km)	Calories
8	298
10	352
12	645
14	475
16	521
17	556
18	575
20	621
22	668
24	705
26	742
28	791
29	562
30	832

Scenario 6

Minutes of Dog Walking vs. Dog's Sleep Time

A dog owner is trying to figure out whether longer daily walks help their energetic dog sleep through the night instead of waking them up. They keep a 14-day log of how long they walk the dog each afternoon and how long the dog sleeps overnight.

Walking Minutes	Sleep (hrs)
10	6.2
15	6.6
20	9.2
25	7.3
30	7.7
35	8.0
40	8.3
45	8.6
50	6.4
55	9.3
60	9.4
65	9.8
70	10.1
75	10.3

Scenario 5 — Cycling Distance (Distance → Calories)

- a) If the cyclist rides **21 km**, estimate how many calories they will burn.
- b) If the cyclist burns **700 calories**, estimate how far they rode.

Scenario 6 — Dog Walking (Walk Time → Sleep Time)

- a) If the dog is walked for **50 minutes**, estimate how long it will sleep overnight.
- b) If the dog sleeps **9.5 hours**, estimate how long it was walked that day.

For each situation below:

1. Plot the data on a graph.
2. Draw a reasonable line of best fit. (It does **not** need to touch every point but should pass through at least 2 points.)

 Scenario 7

Amount of Rain vs. Mud on Soccer Cleats

A student is tired of constantly scraping mud off their soccer cleats after games. They decide to measure how muddy the cleats are (in grams) after each match and compare that to the rainfall recorded that day. They want to know whether **rainfall could reliably predict how messy cleanup will be.**

Rainfall (mm)	Mud (g)
0	12
3	25
5	40
7	51
9	123
11	70
13	82
15	98
17	112
18	118
19	34
20	134
22	83
24	157

 Scenario 8

Hours Studied vs. Test Score

A student wants to improve their grades and experiments with studying different amounts of time for each test. However, some tests are easier than others, and sometimes the student is tired or distracted. They want to determine whether **studying longer actually predicts better results.**

Study Time (hrs)	Score (%)
1.5	48
2	51
3	57
3	63
5	68
6.25	72
7	84
7	79
9.5	82
11	85
12	88
12	91
13	48
13.5	95

 Scenario 7 — Mud on Soccer Cleats (Rainfall → Mud Collected)

- a) If **12 mm of rain** falls during a game, estimate how much mud will stick to the cleats.
- b) If the cleats end up with **100 grams of mud**, estimate how much rain fell during the game.

 Scenario 8 — Study Time (Study Hours → Test Score)

- a) If the student studies for **9 hours**, estimate their score using your line of best fit.
- b) If the student scored **90%**, estimate how many hours they studied.