BRITISH COLUMBIA

Applications of Mathematics 10

Sample Examination

(Updated as of January 2005)

Student Instructions

1. Ensure that in addition to this **Student Booklet**, you have a **Response Form**.
2. **Disqualification** from the examination will result if you bring books, paper, notes or unauthorized electronic devices into the examination room.
3. This examination is designed to be completed in **two hours**. *Students may, however, take up to 30 minutes of additional time to finish.*
4. At the end of the examination, return this **Student Booklet** and the **Response Form** to the supervisor.

APPLICATIONS OF MATHEMATICS 10 PROVINCIAL EXAMINATION

INSTRUCTIONS

1. All answers must be entered on the Response Form using an **HB pencil**. Answers entered in this examination booklet will **not** be marked.
2. A *Student Reference* is provided at the back of this booklet. It contains a table of conversions and formulae. *Rough Work for Graphing* and *Rough Work Space* are also located at the back of the examination.
3. Use the value of π programmed in your calculator rather than the approximation of 3.14.
4. When using the calculator, rounding should occur **only** in the final step of the solution.
5. The provincial examination consists of 60 questions worth one mark each. There are **four** types of questions:

4	True-and-False Questions
8	Numerical-Response Questions
12	Matching Questions
36	Multiple-Choice Questions
60	**Total**

6. When answering **Numerical-Response** questions, please note the following:

- Find the correct question number on the Response Form and write your answer in the spaces provided, noting proper place value. **Only one digit per box.**
- PRINT your digits **as shown below**. Keep within the box provided.

- Negative answers must include a shaded negative circle. If neither circle is bubbled, the answer will be read as positive.
- Leave unused boxes blank.
- For example, the answer **−70.6** will be written as shown.

1. The amount saved on the bike, in dollars, is less than the amount saved on the rollerblades.

Item	Original Price ($)	Discount (%)	Amount Saved ($)
Mountain Bike	399.99	20	
Rollerblades	289.99	25	

A. True
B. False

Use the following information to answer questions 2 to 4.

A furniture storeowner takes out two loans as shown in the spreadsheets below.

Store Purchase Loan

	A	B	C	D	E	F
1	Year	Opening Balance ($)	Annual Interest Rate (%)	Interest Charged ($)	Annual Payment ($)	Closing Balance ($)
2	1	100 000.00	7.5	7500.00	17 072.70	90 427.30
3	2	90 427.30	7.5	6782.05	17 072.70	80 136.65
4	3	80 136.65	7.5	6010.25	17 072.70	69 074.20

Furniture Supply Loan

	A	B	C	D	E	F
1	Year	Opening Balance ($)	Annual Interest Rate (%)	Interest Charged ($)	Annual Payment ($)	Closing Balance ($)
2	1	50 000.00	8.5	4250.00	10 980.35	43 269.65
3	2	43 269.65	8.5		10 980.35	35 967.22
4	3		8.5		10 980.35	

Match each shaded box in the Combined Loan Spreadsheet on the left with its correct Value on the right. Each Value may be used once, more than once or not at all.

Combined Loan Spreadsheet

	A	B	C	D	E
1	Year	Opening Balance ($)	Interest Charged ($)	Annual Payment ($)	Closing Balance ($)
2	1	**– 2 –**			
3	2			**– 3 –**	
4	3				**– 4 –**

Value

A. $9 067.46
B. $9 839.26
C. $10 459.97
D. $28 053.05
E. $97 118.28
F. $100 000.00
G. $108 180.73
H. $150 000.00

5. Kaiden buys a DVD for $35.99.

Province or Territory	GST (%)	PST (%)
Alberta	7	no tax
British Columbia	7	7
Manitoba	7	7
Northwest Territories	7	no tax
Nunavut	7	no tax
Ontario	7	8
Prince Edward Island	7	10
Quebec	7	7.5
Saskatchewan	7	7
Yukon	7	no tax

How much would he save, in dollars, if he buys it in Quebec rather than Prince Edward Island? Answer to two decimal places.

Record your answer neatly on the Response Form.

6. A spreadsheet is created to track a loan.

	A	B	C	D	E	F	G
1	Year	Opening Balance ($)	Interest Rate (%)	Interest Charged ($)	Annual Payment ($)	Extra Payment ($)	Closing Balance ($)
2	1	25 000.00	9	2 250.00	3 895.50	0	23 354.50
3	2	23 354.50	9	2 101.91	3 895.50	0	21 560.91
4	3	21 560.91	9	1 940.48	3 895.50	10 000.00	9 605.89
5	4	9 605.89	9	864.53	3 895.50	0	6 574.92

If the interest rate in Year 4 is changed, which of the following cells would change?

A. B5
B. D4
C. D5
D. E5

7. A table is created to track a loan.

Year	Opening Balance ($)	Interest Rate (%)	Interest Charged ($)	Annual Payment ($)	Closing Balance ($)
1	20 000.00	6.25	1 250.00	4 000.00	17 250.00
2	17 250.00	6.50	1 121.25	4 000.00	14 371.25
3	14 371.25	6.75			

What is the interest charged on the loan in Year 3?

A. $898.20
B. $934.13
C. $970.06
D. $9700.59

8. Ming needs four new tires for his car. He finds the following ads in the newspaper.

Store	Original Price ($)	Discount	Discounted Price ($)
Can City Tires	189.99		
Julie's Tires	46.25		
Tire Town	57.05		
Wheels & Tires	62.66		

At which store would Ming get the best price?

A. Can City Tires
B. Julie's Tires
C. Tire Town
D. Wheels & Tires

9. Kirsten decides to go to Japan. She needs to convert $250 US to Japanese yen.

Currency You Want	Currency You Have: Canadian dollar ($)	US dollar ($)	British pound (£)	Japanese yen (¥)
Canadian dollar ($)	1	1.36724	2.2117	0.011280
US dollar ($)	0.7314	1	1.6177	0.008250
British pound (£)	0.4521	0.61816	1	0.005100
Japanese yen (¥)	88.6500	121.21212	196.0700	1

Which exchange rate would she use?

A. 0.011280
B. 1.36724
C. 88.6500
D. 121.21212

10. Sally is calculating the surface area of a cylinder to two decimal places. The cylinder has a radius of 3 cm and a height of 4 cm. If Sally made an error, in which step did it occur?

	Sally's Steps
A.	$SA = 2\pi(3)^2 + 2\pi(3)(4)$
B.	$SA = 2\pi(9) + 2\pi(12)$
C.	$SA = 131.95 \text{ cm}^2$
D.	There is no error.

11. Collin is using his weekly budget in Canadian dollars to determine the amount international students would need in their currency if they wanted to live in Canada.

Collin's weekly budget in Canadian dollars

Housing	Food	Transportation	Utilities	Entertainment
$210	$80	$50	$35	$60

Exchange rates for $1 Canadian

	US dollar ($)	Australian dollar ($)	European Euro (€)	British pound (£)
$1 Canadian dollar	0.7279	1.1028	0.6442	0.4482

What would the **total** weekly budget be in Australian dollars? Answer to two decimal places.

Record your answer neatly on the Response Form.

12. A spreadsheet is created to track a loan.

	A	B	C	D	E	F	G
1	Year	Opening Balance ($)	Interest Rate (%)	Interest Charged ($)	Annual Payment ($)	Extra Payment ($)	Closing Balance ($)
2	1	25 000.00	9	2 250.00	3 895.50	0	23 354.50
3	2	23 354.50	9	2 101.91	3 895.50	0	21 560.91
4	3	21 560.91	9	1 940.48	3 895.50	10 000.00	9 605.89
5	4	9 605.89	9	864.53	3 895.50	0	6 574.92
6	5	6 574.92	9	591.74	3 895.50	0	3 271.16
7	6	3 271.16	9	294.40	3 565.56	0	0

Which formula would calculate G4?

A. $= B3 + D3 - E3$
B. $= B4 + D4 + E4 - F4$
C. $= B4 + D4 - E4$
D. $= B4 + D4 - E4 - F4$

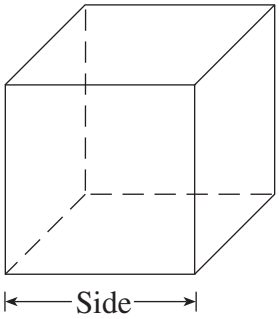
13. The two locations of Lily's Flowers sell roses, tulips and carnations. The two locations sold the following amounts of flowers and made \$0.12 profit per flower.

	Location A	Location B
Roses	50	40
Tulips	66	34
Carnations	80	102

What was Lily's Flowers total profit?

A. \$21.84
B. \$23.52
C. \$44.64
D. \$372.00

14. The volume of a cube is $5\ cm^3$.



What is the length of each side?

A. 1.67 cm
B. 1.71 cm
C. 2.24 cm
D. 125 cm

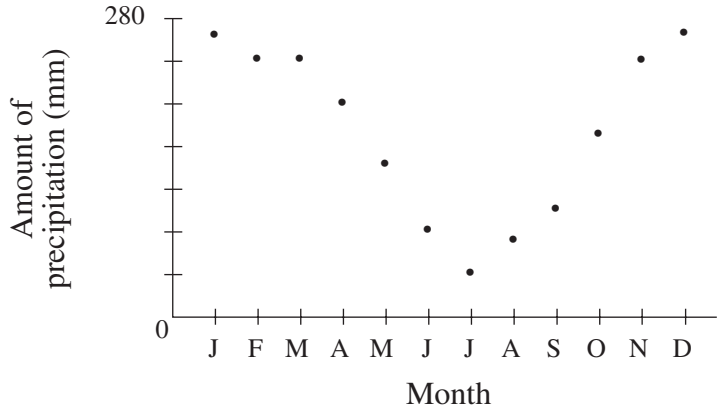
15. A cone and a cylinder both have a height of 10 cm. Their volumes are below.

Cone	Cylinder
$V = 210 \text{ cm}^3$	$V = 581 \text{ cm}^3$

Which of the following statements is correct about the radii of the shapes?

A. The radius of the cone is greater.
B. The radius of the cylinder is greater.
C. The radii of both shapes are equal.
D. The relationship cannot be determined from the information given.

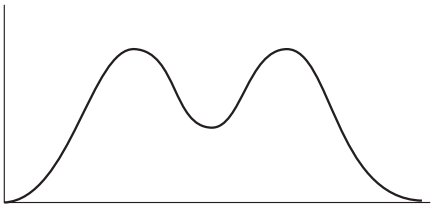
16. Vancouver has a very wet winter, but a relatively dry summer.



The graph correctly represents the situation.

A. True
B. False

17. Which situation best describes the graph?

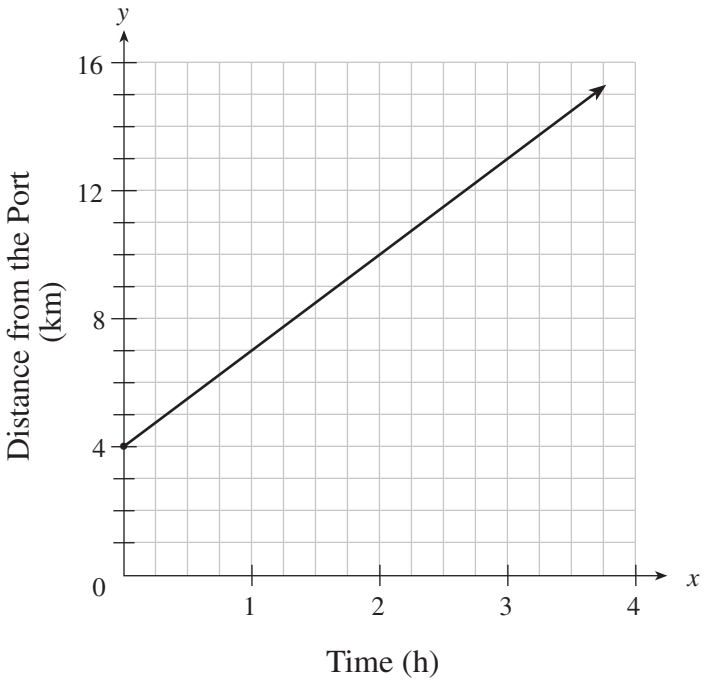


A. Distance over time on a one-way car trip.
B. Cost of parking in a pay parking lot over time.
C. Cars in the school parking lot during one day.
D. Cost of renting a car for an initial fee plus a charge per kilometre travelled.

18. A factory makes tables. The cost of running the factory is $300 per day plus $50 for each table made. What is the total cost *(C)*, in dollars, as a function of the number of tables *(t)* made?

A. $C = 350t$
B. $C = 50t + 300$
C. $C = 300t + 50$
D. $t = 300 + 50C$

19. The graph below models the distance of a boat leaving from a port over time.



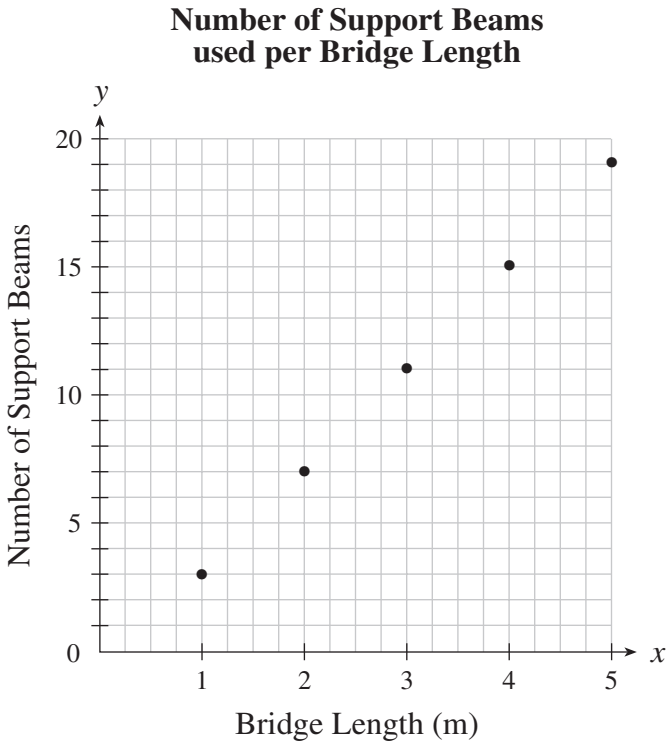
After 6.75 h, how far from the port will the boat be? Answer to two decimal places.

Record your answer neatly on the Response Form.

20. Students sell tickets for a raffle. If the students sell 500 tickets, they lose $250. If the students sell 1500 tickets, they make a profit of $250. How many tickets do they need to sell to "break even" (no loss or gain)?

A. 0 tickets
B. 250 tickets
C. 1000 tickets
D. 2000 tickets

21. Data for various bridges is plotted, where the number of support beams depends on the length of the bridge.



What is the domain of the above graph?

A. $\{1,\ 2,\ 3,\ 4,\ 5\}$

B. $\{3,\ 7,\ 11,\ 15,\ 19\}$

C. All numbers between 1 and 5 inclusive.

D. All numbers.

22. Given the function $y = -2x + 8$, what is the y-intercept?

A. $(-2,\ 0)$
B. $(0,\ -2)$
C. $(0,\ 8)$
D. $(8,\ 0)$

23. Given the function $y = -2x + 8$, what is the x-intercept?

A. $(-4,\ 0)$
B. $(4,\ 0)$
C. $(0,\ 8)$
D. $(8,\ 0)$

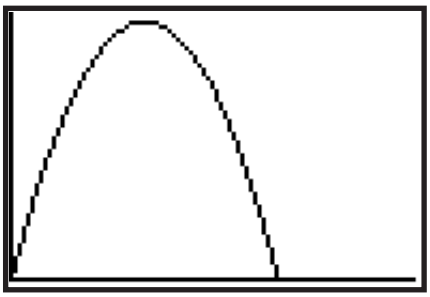
Match each Scenario on the left with the correct Equation on the right.
Each Equation may be used once, more than once or not at all.

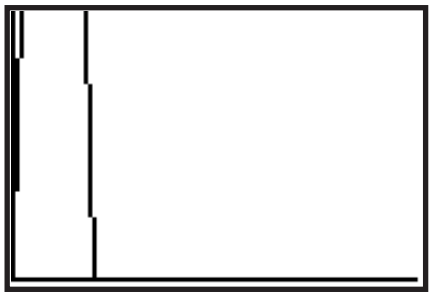
Scenario	Equation
The cost of printing a textbook is \$30, plus a charge of \$0.50 per page.	
24. Initial set-up fee	A. $C(30) = 45$
25. Textbook with 30 pages	B. $C(45) = 30$
26. Total cost of \$50	C. $C(50) = 40$
	D. $C(40) = 50$
	E. $C(30) = 0$
	F. $C(0) = 30$
	G. $C(50) = 55$
	H. $C(55) = 50$

27. To convert temperatures from Fahrenheit (degrees) to Celsius (degrees), a good approximation can be found by using the function $F(C) = \frac{9}{5}C + 32$, where F is temperature in °F and C is temperature in °C. What is the Celsius equivalent if $F(C) = 63$? Answer to two decimal places.

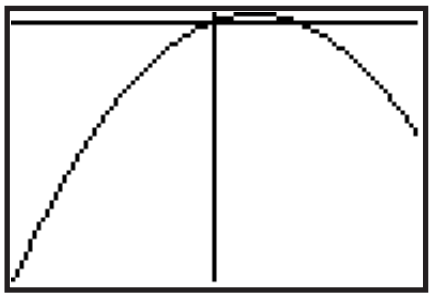
Record your answer neatly on the Response Form.

28. Which of the following best represents the graph of the function $h(t) = 19.5t - 4.9t^2$ on a graphing calculator for values of t between 0 and 6 and values of h between 0 and 20?

A. 

B. 

C. 

D. 

29. Wally wants to advertise his restaurant in the local newspaper. The cost in dollars *(C)* to run an advertisement for *(d)* days is given by the formula:

$$C = 12 + 5.5d$$

Which of the following represents the cost per day to run an advertisement?

A. \$5.50
B. \$12
C. \$17.50
D. C

30. The equation representing a flare's height, h in metres, when shot in the air over time t, in seconds, is $h = -4.9t^2 + 40t$. Which window settings below would be the most appropriate for this situation?

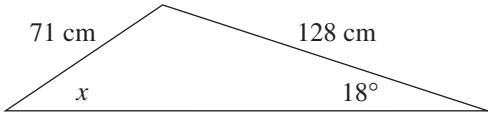
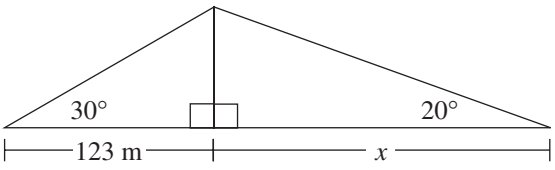
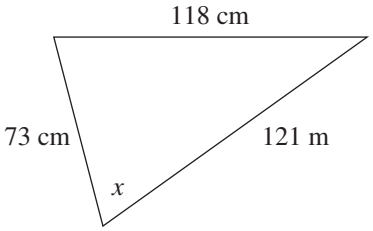
A. $x\min = -10$ $y\min = -890$
$x\max = 10$ $y\max = 81.6$

B. $x\min = -10$ $y\min = -10$
$x\max = 10$ $y\max = 10$

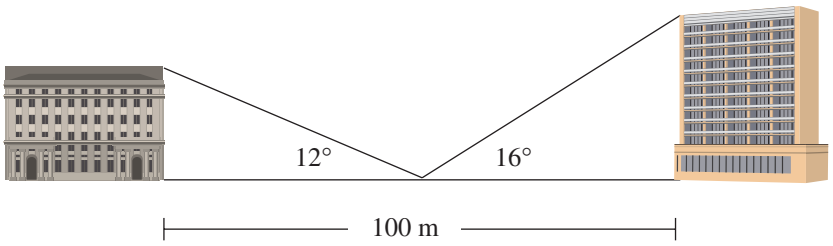
C. $x\min = 0$ $y\min = -90$
$x\max = 10$ $y\max = 81.6$

D. $x\min = 0$ $y\min = 0$
$x\max = 10$ $y\max = 85$

Match each Problem on the left with the Best Solution Method on the right.
Each Solution Method may be used once, more than once or not at all.

Problem (Solving for *x*)	**Best Solution Method**
31. 	A. $\text{sine} = \frac{\text{opposite}}{\text{hypotenuse}}$ only
32. 	B. $\text{cosine} = \frac{\text{adjacent}}{\text{hypotenuse}}$ only
	C. $\text{tangent} = \frac{\text{opposite}}{\text{adjacent}}$ only
	D. Sine Law only
	E. Cosine Law only
33. 	F. Tangent Law only
	G. Pythagorean Theorem only

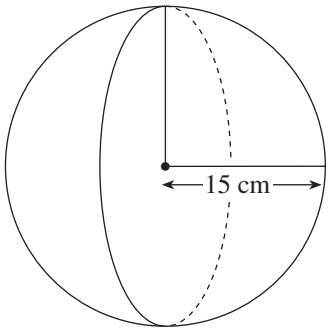
34. Two buildings are 100 m apart. From a point **midway** between them, the angles to their tops are 12° and 16°.



How much taller is one building than the other? Answer to two decimal places.

Record your answer neatly on the Response Form.

35. What is the correct formula for calculating the surface area of the sphere below?



A. $SA = \frac{4}{3}\pi(15)^3$

B. $SA = 4\pi(30)$

C. $SA = 4\pi(15)^2$

D. $SA = 4\pi(30)^2$

36. Which of the following are true for $\sin A = 0.8660$, where $0 \leq A < 180°$?

I.	$A = 30°$
II.	$A = 60°$
III.	$A = 120°$
IV.	$A = 150°$

A. II only
B. III only
C. I and IV only
D. II and III only

37. The dimensions of a square are increased by a scale factor of $3 : 2$. By what scale factor will the square's area be increased?

A. $3 : 2$
B. $6 : 4$
C. $9 : 4$
D. $27 : 8$

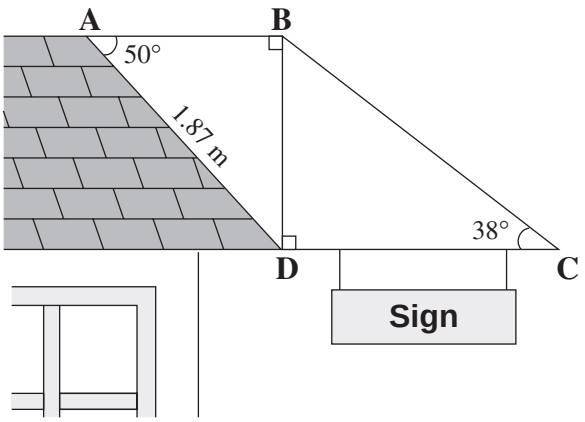
38. If the volume of a sphere is $588.98\ \text{cm}^3$, what is the surface area of the sphere?

A. $113.26\ \text{cm}^2$
B. $339.80\ \text{cm}^2$
C. $498.66\ \text{cm}^2$
D. $1766.93\ \text{cm}^2$

39. What is the best estimate for the length of a new pencil?

A. 18 mm
B. 18 cm
C. 18 inches
D. 18 feet

40. In order to hang a sign horizontally from the side of a roof, a special bracket must be created. The bracket is constructed of two right triangles ΔABD and ΔBCD as shown below.



If the side of the roof, AD, is 1.87 m long, what length, in metres, is bracket piece DC? Answer to two decimal places.

Record your answer neatly on the Response Form.

41. A carpenter uses a tape measure to measure a door frame that is 0.81 m wide and 2.13 m high. The precision of the tape measure is 1 mm.

A. True
B. False

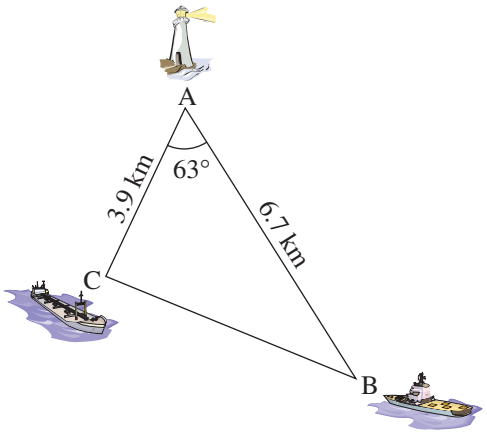
42. Sam measured out four pieces of wood to build a bookcase. The following are the measurements.

I.	500 mm
II.	6.2 cm
III.	16 inches
IV.	2 feet

Which sequence places the measurements in order from **smallest** to **largest**?

A. II, I, III, IV
B. II, III, I, IV
C. IV, II, III, I
D. IV, III, I, II

43. A lighthouse is located at point A with ships at points B and C as shown in the diagram below.



(Diagram not to scale.)

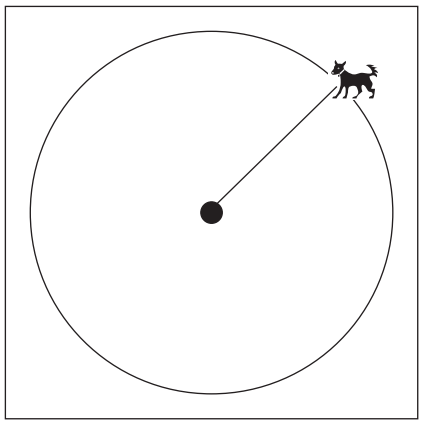
How far apart are the two ships?

A. 36.4 km
B. 7.8 km
C. 6.0 km
D. 3.6 km

44. The speed of a ball is $6\ \text{m/s}$. What is its speed in kilometres per hour?

A. $21\,600\ \text{km/h}$
B. $360\ \text{km/h}$
C. $21.6\ \text{km/h}$
D. $0.006\ \text{km/h}$

45. Jilly, the dog, is tied to a 3-metre leash. George bought Jilly a new 6-metre leash. How many times larger is the new area that Jilly can cover?



A. 2 times
B. 3 times
C. 4 times
D. 8 times

46. Two survey workers stop every 4th car at an intersection to check if the occupants of the car are wearing seatbelts. What is this sampling method called?

A. cluster sampling
B. systematic sampling
C. simple random sampling
D. self-selected sampling

47. Kelly remembers all the steps for conducting a survey, but cannot remember the order. The steps she remembers are as follows:

I.	From the data, make inferences about the entire population.
II.	Identify the population.
III.	Organize and interpret the data.
IV.	Choose a sampling method.
V.	Collect data from the sample.

What is the correct order of steps?

A. II, IV, V, I, IV
B. II, IV, V, III, I
C. IV, II, V, I, III
D. IV, II, V, III, I

48. A survey of 6 people was used to compare the hours spent watching TV with I.Q.

Number of Hours Watching TV	I.Q.
3	106
2	85
4	120
1	100
5	90
2	130

What is the correlation coefficient for the data? Answer to two decimal places.

Record your answer neatly on the Response Form.

49. The winning student council president received 36% of the votes cast at her high school election. What generalization can be made on the election?

A. More girls voted for her than boys.

B. Not every student voted in the election.

C. Approximately $\frac{1}{3}$ of the total student population voted for her.

D. There must have been more than two candidates for student council president.

50. The table below gives the area and rent for several apartments in downtown Vancouver. The cost of an apartment is dependant on its size.

Area (ft^2)	400	465	700	650	726	1200	550
Rent ($)	725	750	1000	850	950	1625	800

What is the linear regression equation for this data?

A. $y = 0.90x - 192.5$
B. $y = 0.83x - 122.39$
C. $y = 1.04x - 251.44$
D. $y = 1.16x + 179.80$

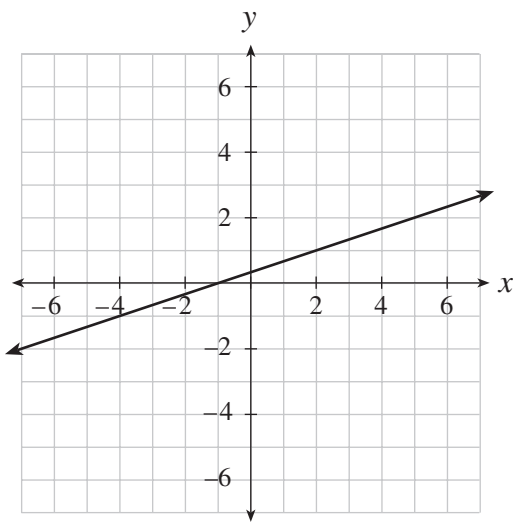
51. Given the following values for the correlation coefficient *r*:

$$0.6,\ 0,\ -0.8 \text{ and } 1$$

What is the order of **strongest correlation** to **weakest correlation**?

A. $-0.8,\ 0,\ 0.6,\ 1$
B. $0,\ -0.8,\ 0.6,\ 1$
C. $1,\ -0.8,\ 0.6,\ 0$
D. $1,\ 0.6,\ 0,\ -0.8$

Use the following graph of a line to answer question 52.



I.	The equation of the line is $y = \frac{1}{3}x + \frac{1}{3}$
II.	The point $(11,\ 4)$ passes through the line.

52. Which of the statements are true?

A. I only
B. II only
C. I and II
D. none are true

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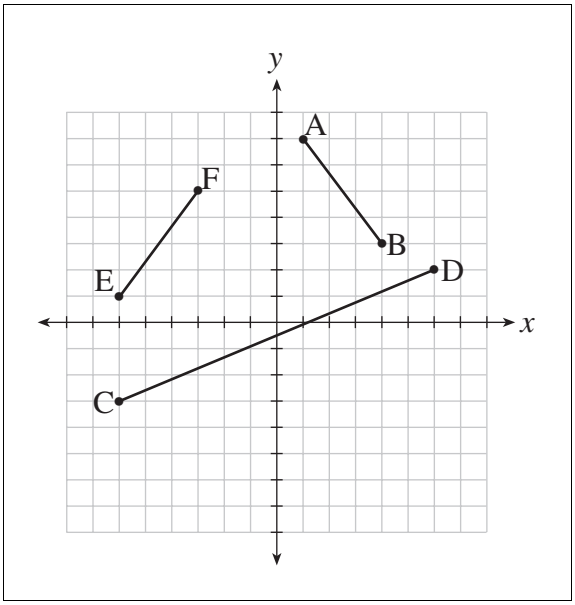
53. The slope of a line parallel to the *y*-axis is undefined.

A. Always True
B. Sometimes True
C. Never True

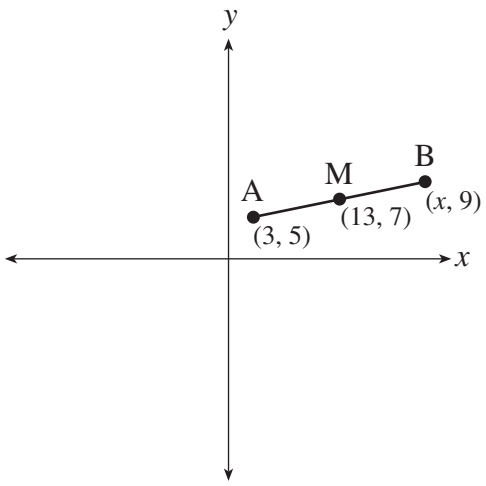
Use the following graph to answer questions 54 to 56.



Match each Statement on the left with the correct Number on the right.
Each Number may be used once, more than once or not at all.

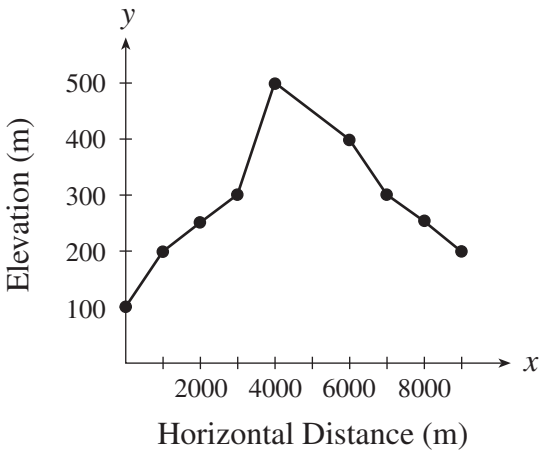
Statement	Number
54. Length of AB	A. $-\frac{4}{3}$
55. Slope of AB	B. $-\frac{3}{4}$
56. Slope parallel to CD	C. $-\frac{5}{12}$
	D. $\frac{5}{12}$
	E. $\frac{4}{3}$
	F. $\frac{12}{5}$
	G. 5
	H. 7

57. What is the length of line segment AB? Answer to two decimal places.



Record your answer neatly on the Response Form.

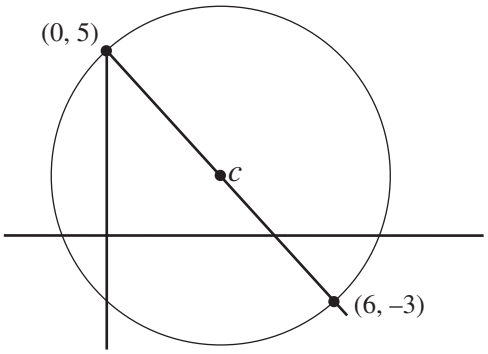
58. The following is the elevation profile for a hiking trail.



If the hiking group starts at an elevation of 100 m, what is the elevation when they stop to rest halfway up?

A. 250 m
B. 300 m
C. 500 m
D. 3000 m

59. What is the length of the radius of the circle?



A. $r = 5$
B. $r = 6.32$
C. $r = 10$
D. $r = 10.30$

60. Mark's house is located at $(-2,\ 3)$. Mark's friend Chris lives 3 blocks north and 2 blocks east of Mark's house. Which of the following are true about the line between their homes?

I.	The slope is $\frac{3}{2}$
II.	The x-intercept is $(-4,\ 0)$
III.	The equation of the line is $y = \frac{3}{2}x + 6$

A. I and II only
B. I and III only
C. II and III only
D. I, II and III

END OF EXAMINATION

STUDENT REFERENCE

UNIT CONVERSION

	Common Imperial	Imperial and Metric	Metric
Length	1 mile = 1760 yards = 5280 feet 1 yard = 3 feet = 36 inches 1 foot = 12 inches	1 mile ≅ 1.609 km 1 yard ≅ 0.9144 m 1 foot ≅ 0.3048 m 1 inch ≅ 2.54 cm	1 km = 1000 m 1 m = 100 cm 1 cm = 10 mm
Capacity (Volume)	1 gallon = 4 quarts = 8 pints 1 quart = 2 pints	1 gallon ≅ 4.546 L	1 L = 1000 mL 1 mL = 1 cm^3
Mass (Weight)	1 imperial ton = 2000 pounds 1 pound = 16 ounces	1 pound ≅ 0.454 kg 1 ounce ≅ 28.35 g	1 t = 1000 kg 1 kg = 1000 g

FORMULAE

Trigonometry

(Put your calculator in Degree Mode)

- Right triangles

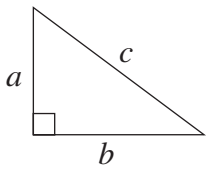
Pythagorean Theorem

$$a^2 + b^2 = c^2$$

$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan A = \frac{\text{opposite}}{\text{adjacent}}$$



- Other triangles, use Sine Law or Cosine Law

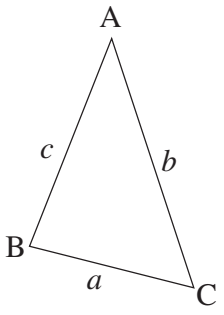
Law of Sines

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

Law of Cosines

$$a^2 = b^2 + c^2 - 2bc\cos A$$

or $$\cos A = \frac{a^2 - b^2 - c^2}{-2bc}$$



Other Formulae

- The equation of a line:

$$y = mx + b$$

- The slope of a line:

$$m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

- The distance between two points:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

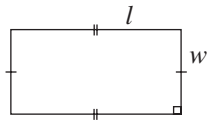
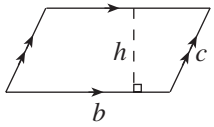
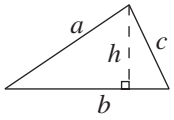
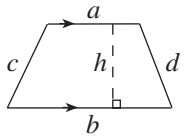
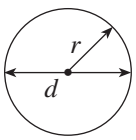
- The midpoint formula:

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

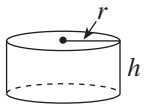
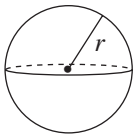
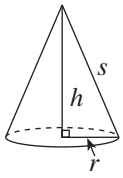
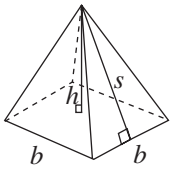
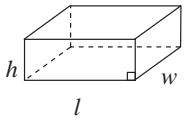
You may detach this page for convenient reference.
Exercise care when tearing along perforations.

GEOMETRIC FORMULAE

Key Legend	
b = base	d = diameter
h = height	r = radius
l = length	P = perimeter
w = width	C = circumference
s = slant height	A = area
	SA = surface area
	V = volume

Geometric Figure	Perimeter	Area
Rectangle 	$P = 2l + 2w$ $P = 2(l + w)$	$A = lw$
Parallelogram 	$P = b + b + c + c$ $P = 2b + 2c$	$A = bh$
Triangle 	$P = a + b + c$	$A = \frac{bh}{2}$ **or** $A = \frac{1}{2}bh$
Trapezoid 	$P = a + b + c + d$	$A = \frac{(a + b)h}{2}$ or $A = \frac{1}{2}(a + b)h$
Circle 	$C = \pi d$ **or** $C = 2\pi r$	$A = \pi r^2$

NOTE: Use the value of π programmed in your calculator rather than the approximation of 3.14.

Geometric Figure	Surface Area	Volume
Cylinder 	$A_{top} = \pi r^2$ $A_{base} = \pi r^2$ $A_{side} = 2\pi rh$ $SA = 2\pi r^2 + 2\pi rh$	$V = \pi r^2 h$
Sphere 	$SA = 4\pi r^2$	$V = \frac{4}{3}\pi r^3$
Cone 	$A_{cone} = \pi rs$ $A_{base} = \pi r^2$ $SA = A_{cone} + A_{base}$	$V = \frac{1}{3}\pi r^2 h$
Square-Based Pyramid 	$A_{triangle} = \frac{1}{2}bs$ (for each triangle) $A_{base} = b^2$ $SA = A_{4triangles} + A_{base}$	$V = \frac{1}{3}b^2 h$
Rectangular Prism 	$SA = wh + wh + lw + lw + lh + lh$ $SA = 2(wh + lw + lh)$	$V = lwh$

NOTE: Use the value of π programmed in your calculator rather than the approximation of 3.14.

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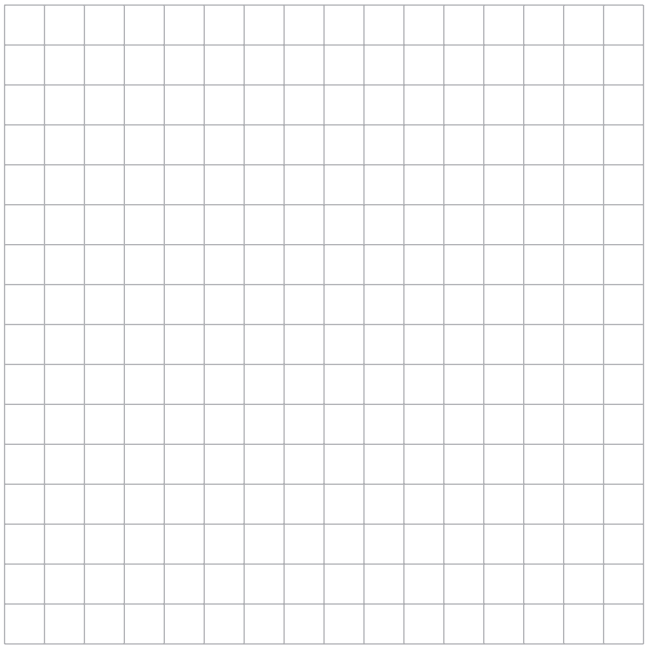
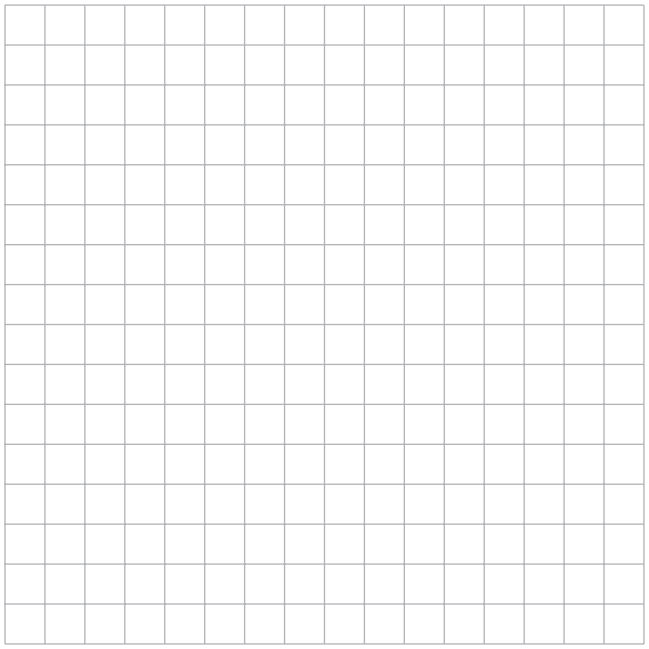
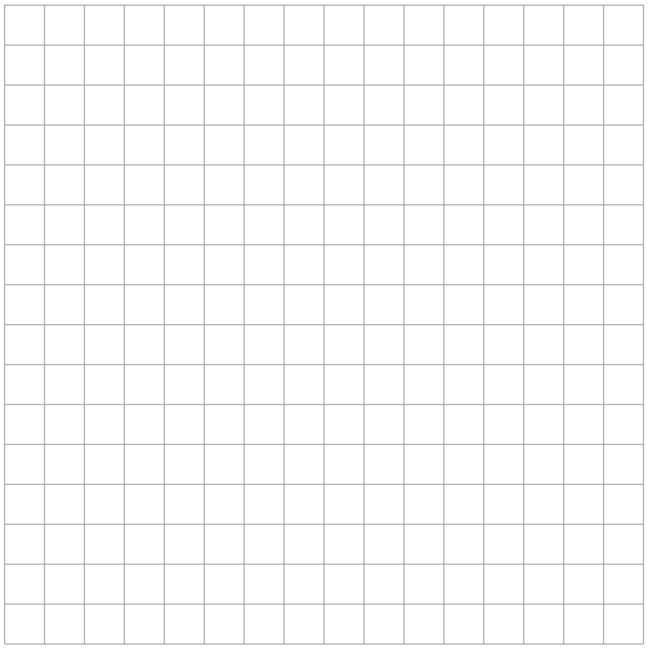
ROUGH WORK SPACE

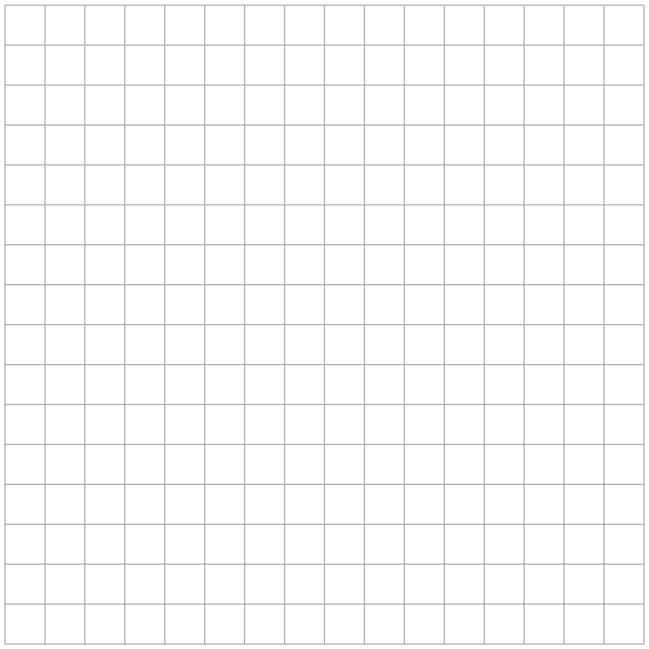
ROUGH WORK FOR GRAPHING

(No marks will be given for work done on this page.)









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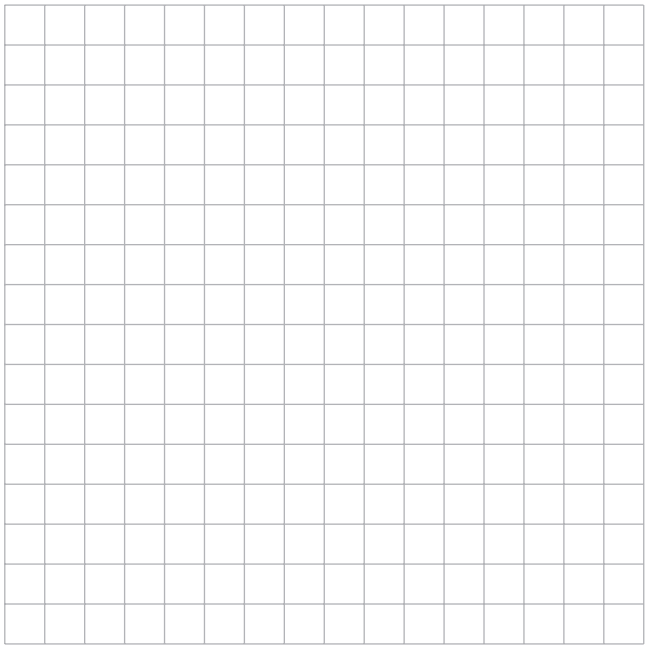

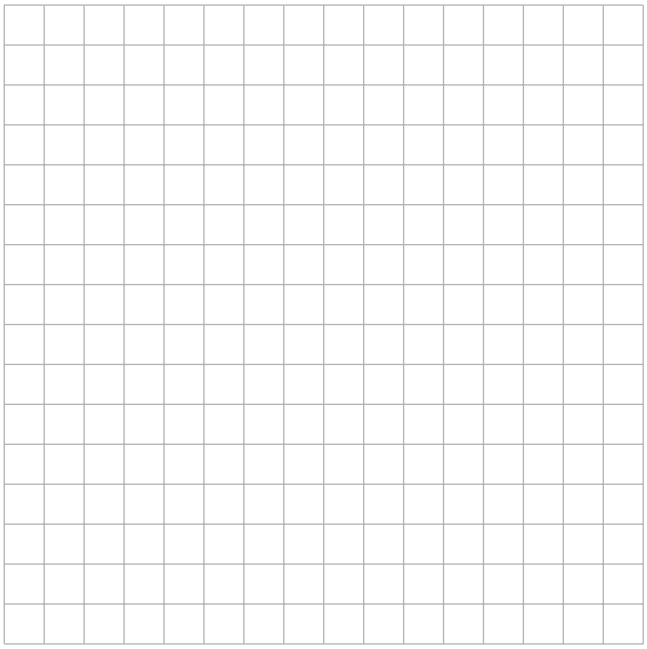

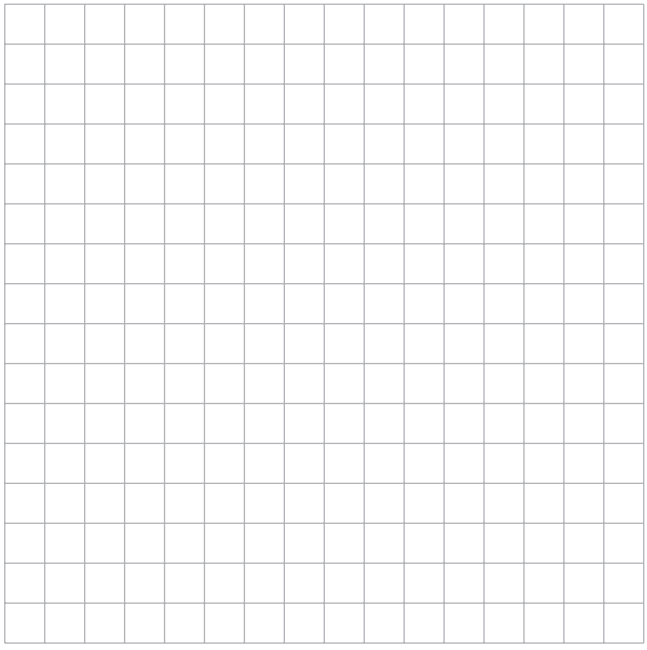

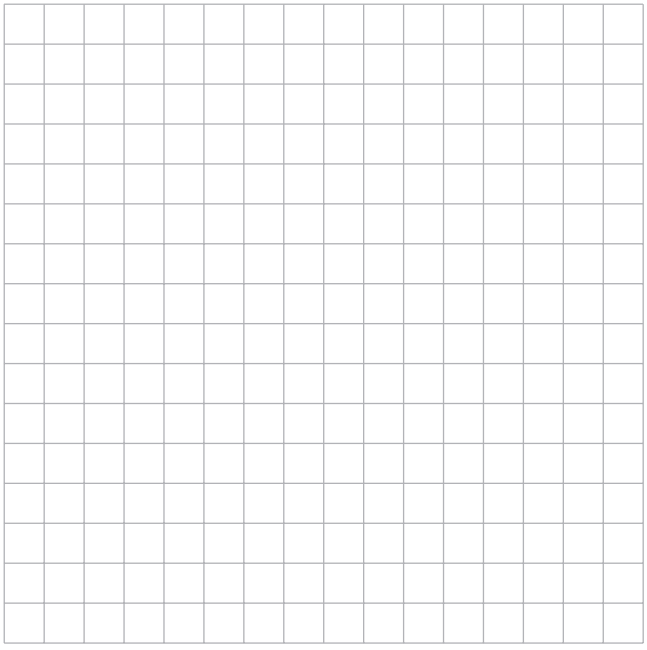

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