



BRITISH  
COLUMBIA

# Applications of Mathematics 10

## June 2004 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  $\pi$  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:

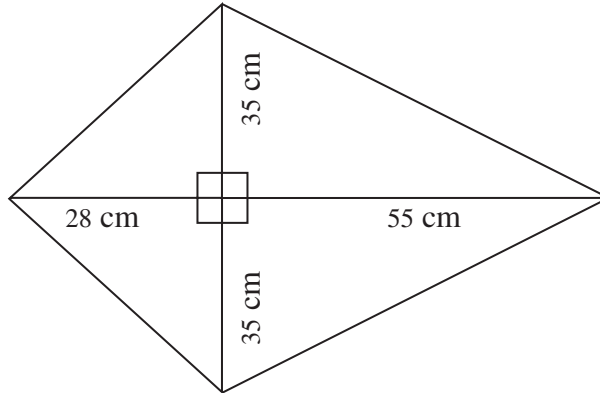
- Find the correct question number on the Response Form and write your answer in the spaces provided, noting proper place value. **Only one digit per box.**
- PRINT your digits **as shown below**. Keep within the box provided.

0	1	2	3	4	5	6	7	8	9
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- 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.

+	-								
<input type="radio"/>	<input checked="" type="radio"/>		7	0	.	6			

1. A kite is constructed from four right triangles as shown below.



The perimeter of the kite, to the nearest whole number, is 220 cm.

- A. True
- B. False

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

Table									Value
Province	PST (%)	Price (\$)	Discount (%)	Discount (\$)	Discount Price (\$)	7% GST (\$)	PST (\$)	Total Paid (\$)	
Alberta	no tax	200.00	8			- 2 -			A. \$0.00
B.C.	7	550.00	10					- 3 -	B. \$12.88
Ontario	8	600.00	25				- 4 -		C. \$14.00
									D. \$31.50
									E. \$36.00
									F. \$517.50
									G. \$564.30
									H. \$627.00

Use the following tables to answer question 5.

A person's budget in Canadian dollars				
Housing	Food	Transportation	Utilities	Entertainment
\$850	\$320	\$460	\$160	\$250

Exchange rates for \$1 Canadian				
	US (\$)	AUS (\$)	EUR (€)	GBP (£)
\$1 CAD	0.7279	1.1028	0.6442	0.4482

5. What is the cost of utilities in U.S. dollars? Answer in dollars and cents.

**Record your answer neatly on the Response Form.**

6. Lisa made a spreadsheet to represent her 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	10	2 335.45	3 895.50	0	21 794.45
4	3	21 794.45	9	1 961.50	3 895.50	10 000.00	9 860.45
5	4	9 860.45	9	887.44	3 895.50	0	6 852.39
6	5	6 852.39	9	616.72	3 895.50	0	3 573.61
7	6	3 573.61	11	393.10		0	0

In which year does Lisa pay the largest dollar amount in interest?

- A. Year 1
- B. Year 2
- C. Year 3
- D. Year 6

7. Heike has a \$5000 loan. The spreadsheet below illustrates the repayment of her loan.

	A	B	C	D	E	F
<b>1</b>	<b>Year</b>	<b>Opening Balance (\$)</b>	<b>Interest Rate (%)</b>	<b>Interest Charged (\$)</b>	<b>Annual Payment (\$)</b>	<b>Closing Balance (\$)</b>
<b>2</b>	2003	5000.00	3	150.00	1150.00	4000.00
<b>3</b>	2004	4000.00	3	120.00	1150.00	2970.00
<b>4</b>	2005	2970.00	3	89.10	1150.00	1909.10
<b>5</b>	2006	1909.10	3	57.27	1150.00	816.37
<b>6</b>	2007	816.37	3			0.00

What is the total amount of interest paid on the \$5000 loan?

- A. \$150.00
- B. \$416.37
- C. \$440.86
- D. \$661.28

8. Terrance tracked an investment using this table.

Year	Opening Balance (\$)	Annual Interest Rate (%)	Interest Earned (\$)	Closing Balance (\$)
1	3575.43	2.5	89.38	3664.38
2	3664.38	4.5		
3		5.5		

What amount of interest is earned in Year 3?

- A. \$93.90
- B. \$210.61
- C. \$464.89
- D. \$4039.89

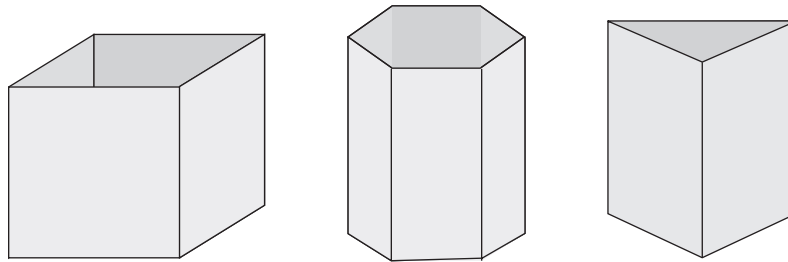
9. The spreadsheet below illustrates the repayment of a loan with a fixed interest rate.

	A	B	C	D	E	F
1	Year	Opening Balance (\$)	Interest Rate (%)	Interest Charged (\$)	Annual Payment (\$)	Closing Balance (\$)
2	1	7000.00		595.00	1000.00	6595.00
3	2	6595.00		560.58	1000.00	
4	3				1000.00	

What is the closing balance of Year 3?

- A. \$5678.80
- B. \$6155.58
- C. \$6595.00
- D. \$6678.80

10. Wally is considering various designs for planters.



How could he calculate the volume of each of the planters?

- A. Square the length of the base and multiply by the height of the planter.
- B. Multiply the perimeter of the base by the height of the planter.
- C. Multiply the length of the base by the height of the planter.
- D. Multiply the area of the base by the height of the planter.

11. A pipe has an inside circumference of 9.42 cm. What is the volume, in cubic centimetres ( $\text{cm}^3$ ), of the largest sphere that can pass through the pipe? Answer to two decimal places.

**Record your answer neatly on the Response Form.**

Use the following Tax Table to answer questions 12 and 13.

Province or Territory	GST (7%)	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

12. Of the four provinces and territories listed below, which has the lowest total tax rate?
- A. Quebec
  - B. Manitoba
  - C. Northwest Territories
  - D. Prince Edward Island

13. The following items were purchased in Ontario.

Item	Price (\$)	GST (\$)	PST (\$)	Total Price
T-shirt	29.99	2.10	2.40	34.49
Television	449.99	31.50	36.00	517.49
			<b>Total Cost</b>	<b>551.98</b>

If these items were purchased in B.C., what is the new total cost of the two items?

- A. \$547.18
- B. \$556.78
- C. \$590.62
- D. \$629.26

14. The following table represents sales of different types of furniture on two separate days.

	Saturday	Sunday
Chairs	10	30
Sofas	2	9
Lamps	6	12

If the store makes a profit of \$200.00 for each sofa, how much profit did the store make in the two days from the sofa sales?

- A. \$400.00
- B. \$1 800.00
- C. \$2 200.00
- D. \$13 800.00

15. Lily's Vegetable Company has 3 large greenhouses and 2 small greenhouses. The 5 greenhouses together produced the following:

Vegetable	Peppers	Tomatoes	Lettuce
Amount (kg)	6 950	12 400	3 500

On average, each **large** greenhouse produced the following:

Vegetable	Peppers	Tomatoes	Lettuce
Amount (kg)	1 750	3 200	950

How many kilograms of lettuce does one **small** greenhouse produce?

- A. 1275
- B. 890
- C. 650
- D. 325



16. The following equation represents the cost,  $C$ , in dollars, of printing flyers, where  $n$  represents the number of flyers being printed.

$$C(n) = 0.01n + 50$$

The fixed cost is \$50.

- A. True
- B. False

17. Joanne has a part-time job in the restaurant. She receives an hourly wage plus commission based on tips. Her gross monthly pay,  $P$ , is represented by the equation:

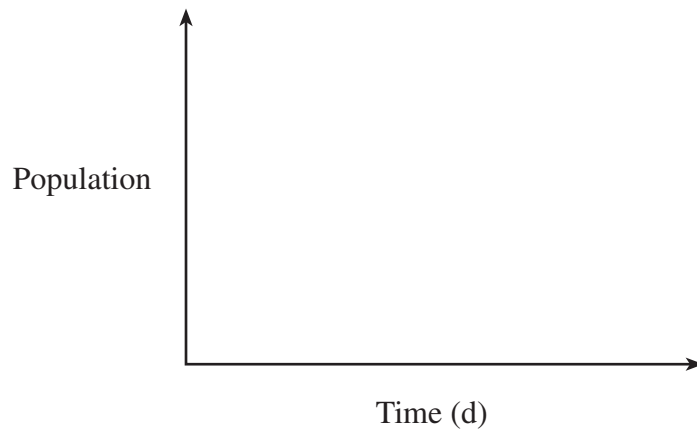
$$P = 8h + 0.75t$$

where  $h$  is the number of hours worked and  $t$  is the monthly tips in dollars.

Joanne's gross monthly pay in December was \$1200.00. Her customers left \$400.00 in tips. How many hours did she work?

- A. 100 h
- B. 112.5 h
- C. 150 h
- D. 187.5 h

18. The number of ants in a colony doubles every fifteen days (d). The colony started with 250 ants and was observed for 90 d.



If the population were graphed in equal divisions of 500, how many divisions would be needed for 90 d?

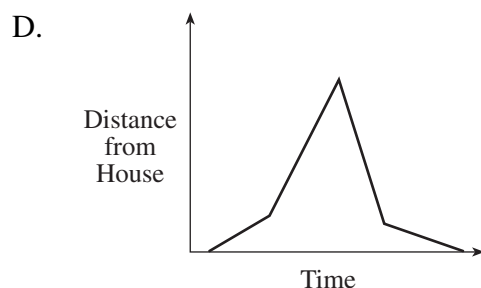
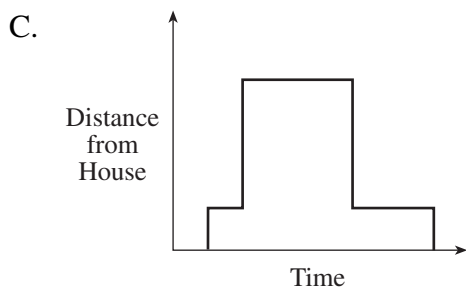
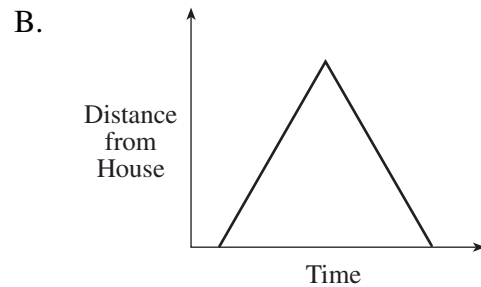
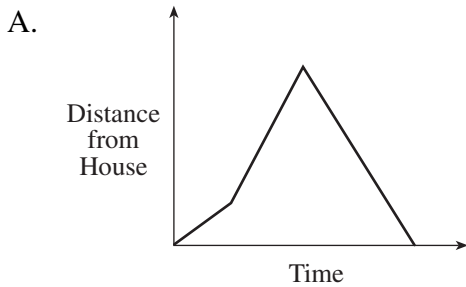
- A. 6
  - B. 15
  - C. 32
  - D. 90
19. The following equation represents the cost of printing flyers,  $C$ , in dollars, where  $n$  represents the number of flyers being printed.

$$C(n) = 0.065n + 50$$

What is the value of  $C(110)$ ? Answer in dollars and cents.

**Record your answer neatly on the Response Form.**

20. Dave is going for a run from his house. He stretches, jogs slowly for 3 min, runs for 15 min, runs back towards his house for 15 min, and finally does a cool down by walking for 4 min. Which graph best represents this scenario?



21. A sandwich shop's profit,  $P$ , is represented by the function  $P = 6n - 180$ , where  $n$  represents the number of sandwiches sold. What is the slope of the function and what does it best represent?

- A. slope = 6; it represents the store's cost for supplies.
- B. slope = 6; it represents the customer's cost per sandwich.
- C. slope = 30; it represents when the store breaks even.
- D. slope = 180; it represents the store's cost for supplies.

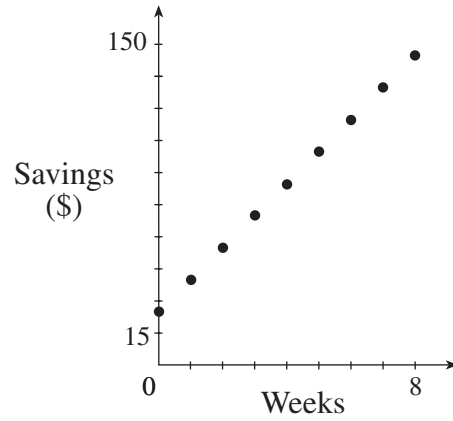
22. To convert a temperature from degrees Fahrenheit,  $F$ , to degrees Celsius,  $C$ , the formula  $F(C) = \frac{9}{5}C + 32$  can be used. What is the Celsius equivalent if  $F(C) = 15$ ?

- A. 59
- B. 40.3
- C. -5
- D. -9.4

23. Sara opened a savings account with \$25 and added \$15 each week for 8 weeks.  
The savings,  $S$ , in dollars, as a function of time in weeks,  $w$ , is given by the equation:

$$S = 15w + 25$$

**Sara's Savings**

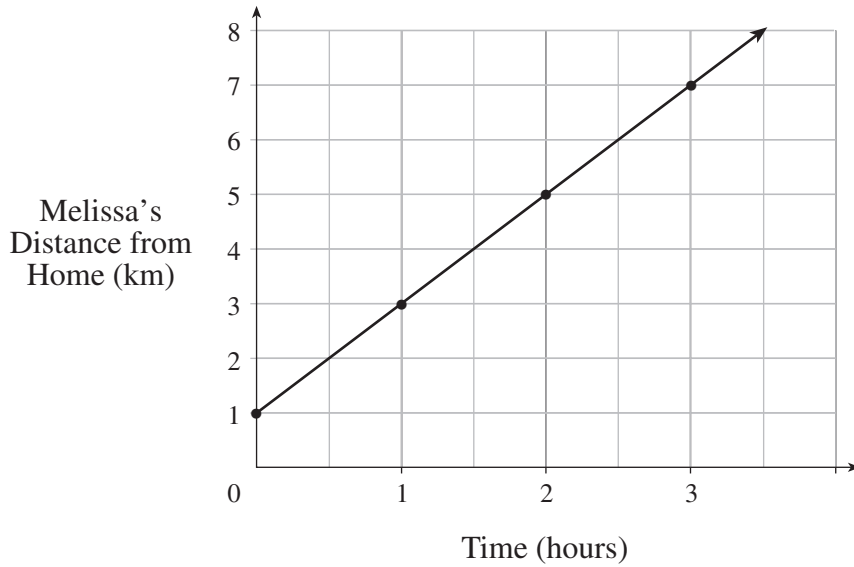


What is the domain?

- A.  $\{0, 1, 2, \dots 8\}$
- B.  $\{1, 2, 3, \dots 8\}$
- C.  $\{0, 15, 30, \dots 150\}$
- D.  $\{25, 40, 55, \dots 145\}$

Use the following information to answer questions 24 to 26.

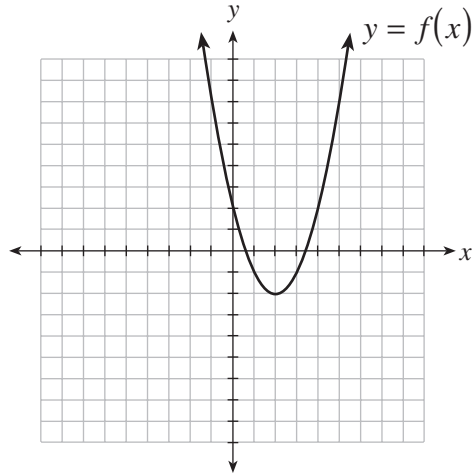
The following graph represents Melissa's distance from her home, in kilometres, while she is on a hike.



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

Situation	Value
24. Melissa's initial distance from home, in kilometres.	A. 0
25. Melissa's distance from home after 3 h.	B. 1
26. Time that Melissa has been hiking when she is 11 km from home.	C. 3
	D. 5
	E. 7
	F. 10
	G. 23
	H. 33

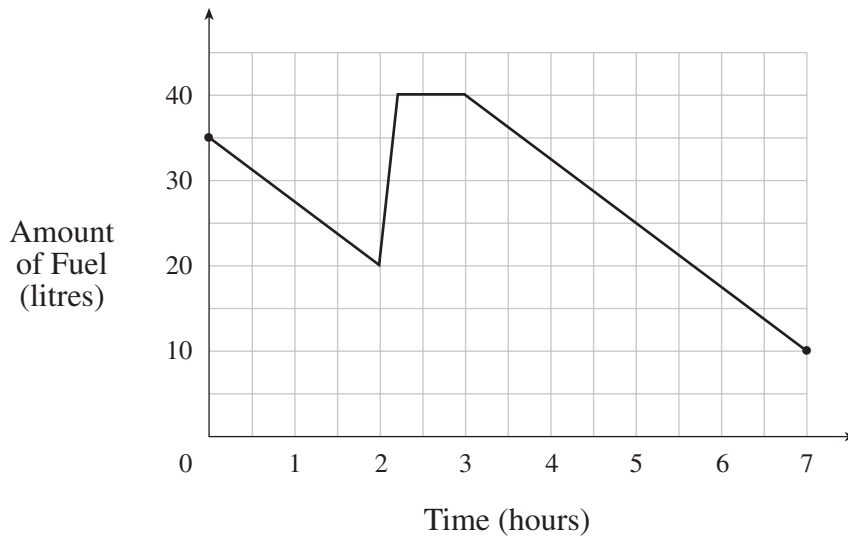
27. What is the value of  $f(2)$ ? Answer to the nearest whole number.



**Record your answer neatly on the Response Form.**

28. What is the **range** of the relation in the graph below?

**Amount of Fuel Over Time**

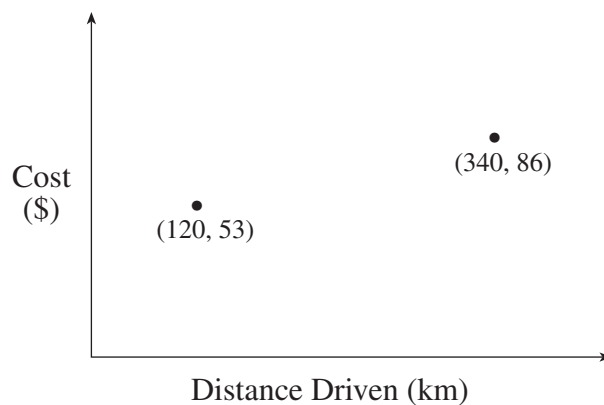


- A. 0 to 7
- B. 0 to 40
- C. 10 to 40
- D. all numbers

29. Cell-Tel charges the restaurant a flat rate of \$29.95 per month for 100 min of telephone use, plus \$0.24 for each additional minute. Wally's last bill totaled \$43.87 before tax. For how many minutes did he use the phone that month?

- A. 158
- B. 124
- C. 83
- D. 58

30. Loan-A-Car charges an initial fee for every car rented plus a charge for every kilometre driven. If the car is driven for 120 km, the cost is \$53.00. If the car is driven for 340 km, the cost is \$86.00.



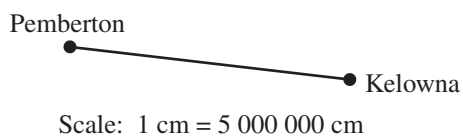
What is the agency's initial fee?

- A. 0
- B. 0.15
- C. 33
- D. 35

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

Statement	Measurement
31. <b>Material</b> needed to cover a soccer ball of radius 10 cm	A. 11.0 cm
32. The <b>volume</b> of air needed to fill a basketball of radius 12 cm	B. 14.3 cm
33. The <b>diameter</b> of a bowling ball with surface area $1520.5 \text{ cm}^2$	C. 22.0 cm
	D. $314.2 \text{ cm}^2$
	E. $1256.6 \text{ cm}^2$
	F. $1809.7 \text{ cm}^3$
	G. $4188.0 \text{ cm}^3$
	H. $7238.2 \text{ cm}^3$

34. On a map of BC, the straight-line distance from Kelowna to Pemberton measures 3.8 cm.

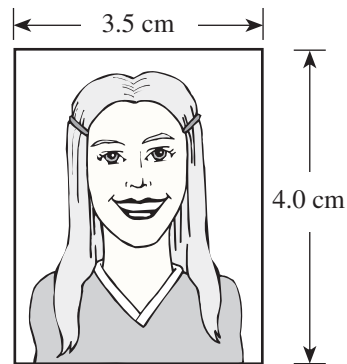


What is the **actual** distance, in kilometres, from Kelowna to Pemberton in a straight line?  
Answer to the nearest **kilometre**.

**Record your answer neatly on the Response Form.**

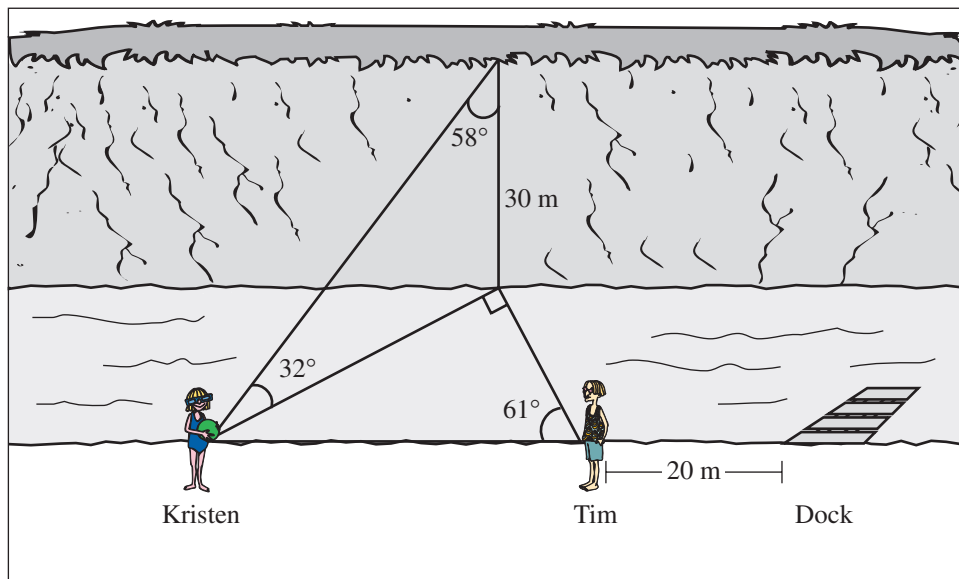


35. The Yearbook Club decides to cut costs for the yearbook by reducing the picture size of personal photos. The original pictures have dimensions of 3.5 cm by 4.0 cm.



If each dimension is reduced by a scale factor of 1:2, what is the area of the final reduced photo?

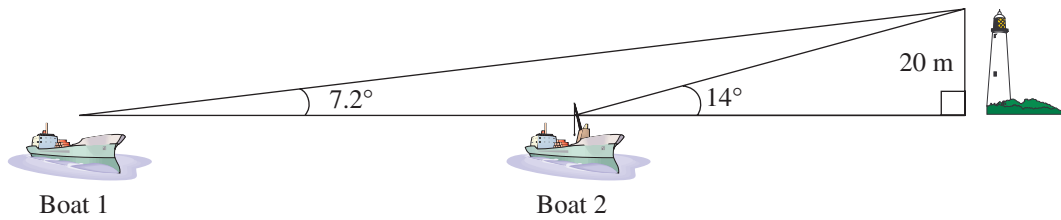
- A.  $3.5 \text{ cm}^2$
  - B.  $7 \text{ cm}^2$
  - C.  $28 \text{ cm}^2$
  - D.  $56 \text{ cm}^2$
36. Tim and Kristen are standing near the dock.



If the height of the cliff is 30 m and Tim is 20 m from the dock, how far is Kristen from the dock, in metres?

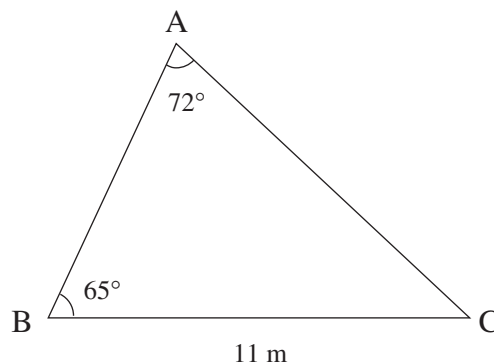
- A. 36.55 m
- B. 48.01 m
- C. 54.89 m
- D. 74.89 m

37. A lighthouse has a height of 20 m. The angles from each boat to the top of the lighthouse are  $7.2^\circ$  and  $14^\circ$  respectively.



What is the distance, in metres, between the boats?

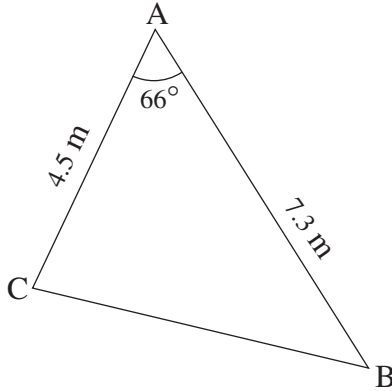
- A. 76.90 m  
B. 78.10 m  
C. 158.32 m  
D. 238.54 m
38. What value(s) of  $\angle A$  would give  $\cos A = 0.5879$ , where  $\angle A$  is between  $0^\circ$  and  $180^\circ$ ?
- A.  $0.99^\circ$   
B.  $54^\circ$   
C.  $126^\circ$   
D.  $54^\circ$  and  $126^\circ$
39. Consider the following diagram:



What method is used to find side AC?

- A. Sine Law  
B. Cosine Law  
C. Tangent Law  
D. Pythagorean Theorem

40. How long is side CB in metres? Answer to two decimal places.



**Record your answer neatly on the Response Form.**

41. If the dimensions of a cube are doubled, the surface area is increased by a factor of 2.

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

42. Which of the following instruments would **best** measure the height of a door?

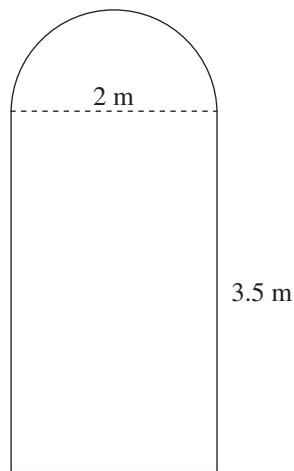
- A. ruler
- B. micrometer
- C. tape measure
- D. trundle wheel

43. A device measured a distance to be 4.26 m. What is the precision of the measuring device?

- A. 0.005 m
- B. 0.01 m
- C. 0.05 m
- D. 0.1 m

44. A school bus is travelling at a rate of 50 km/h. It takes ten seconds for the bus to cross a bridge. To the nearest metre, how long is the bridge?
- A. 8
  - B. 14
  - C. 83
  - D. 139

45. A diagram of a window is shown below. The top of the window is a semi-circle and the bottom part is a rectangle.



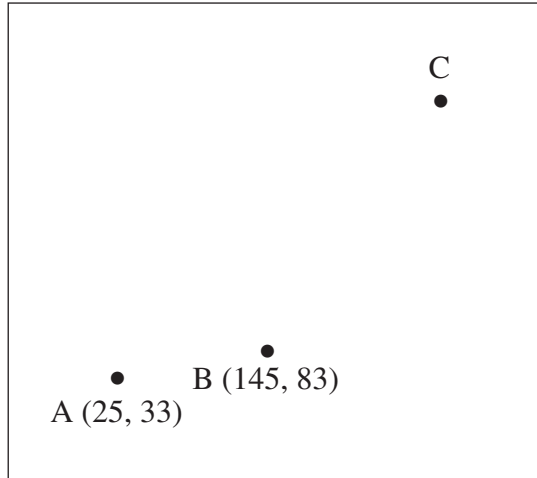
What is the total area of the window?

- A. 8.57 m
  - B. 10.14 m
  - C. 13.28 m
  - D. 19.57 m
46. The endpoints of a diameter of a circle are A(-5, 7) and B(1, -1). What are the coordinates of the centre of the circle?
- A. (-2, 3)
  - B. (3, -2)
  - C. (1, 0)
  - D. (-3, 4)

47. Which statement best describes the slopes of parallel lines?

- A. equal slopes
- B. undefined slopes
- C. positive reciprocal slopes
- D. negative reciprocal slopes

48. Three survey pegs have the following coordinates labelled on them:



What is the distance between pegs B and C if it is twice the distance between pegs A and B?  
Answer to the nearest whole number.

**Record your answer neatly on the Response Form.**

49. On a map, the corners of a farmer's field have coordinates of

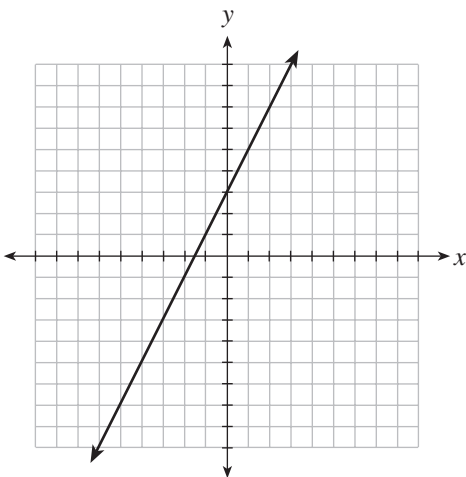
$$A(-1, 4), B(-3, -2), C(3, -1) \text{ and } D(4, 5).$$

Which of the following is true about the line segments enclosing the field?

I.	$AB \perp BC$
II.	$BC \perp CD$
III.	$BC \parallel CD$

- A. II only
- B. III only
- C. I and III only
- D. None of the statements are true

50. Which of the following are properties of the line  $y = 2x + 3$ ?

I.	slope = 2 and y-intercept = 3
II.	The line passes through the point (9, 20)
III.	

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

51. Rebecca plots two points: A(-32, 40) and B(10, 124). What is the equation of the line that passes through these points?

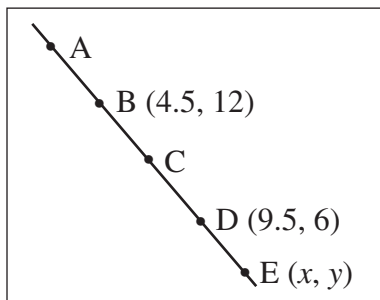
A.  $y = \frac{1}{2}x + 56$

B.  $y = 2x + 104$

C.  $y = 0.5x - 52$

D.  $y = 1.6x + 60.7$

52. Points A, B, C, D and E are all on the same line.



- C is the midpoint of A and E
- B is the midpoint of A and C
- D is the midpoint of C and E

What are the coordinates of point E?

A. (7, 9)

B. (12, 3)

C. (12, 9)

D. (14.5, 0)

53. The following table shows the results of a survey of favourite radio stations.

Station	Number of Listeners in Survey
Radio Station X	30
Radio Station Y	110
Radio Station Z	70

Based on the results of the survey of 75 000 listeners to the three radio stations, approximately 25 000 would listen to Radio Station Z.

- A. True
- B. False

<b>Match each Description on the left with the correct Sampling Method on the right. Each Sampling Method may be used once, more than once or not at all.</b>	
<b>Description</b>	<b>Sampling Method</b>
<p>54. A person only inspects the top layer of fruit in each crate to avoid bruising.</p> <p>55. The police pull over every 5<sup>th</sup> vehicle.</p> <p>56. A list of 10-digit phone numbers is randomly created by a computer and the people with the phone numbers are surveyed.</p>	<ul style="list-style-type: none"> <li>A. cluster sample</li> <li>B. systematic sample</li> <li>C. convenience sample</li> <li>D. self-selected sample</li> <li>E. simple random sample</li> <li>F. stratified random sample</li> </ul>



57. The table below gives the area in square feet, and rent in dollars, for several apartments in downtown Vancouver.

<b>Area (ft<sup>2</sup>)</b>	400	465	700	650	726	1200	550
<b>Rent (\$)</b>	725	750	1000	850	950	1625	800

Using the linear regression equation, what is the cost of a 600 ft<sup>2</sup> apartment?  
 Answer to the nearest dollar.

**Record your answer neatly on the Response Form.**

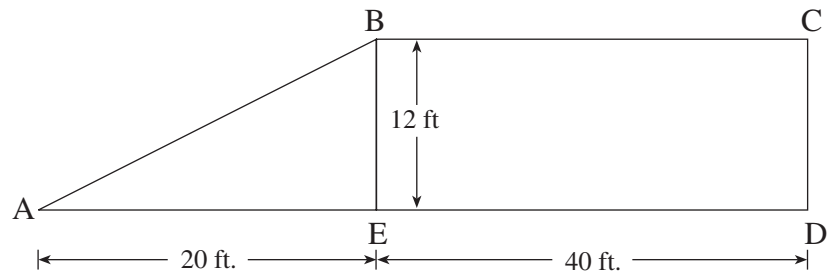
58. The following table represents several students' homework marks compared to their final report card marks.

<b>Homework Mark (%)</b>	<b>Final Report Card Mark (%)</b>
23	45
45	51
76	75
98	95

What is the value of the correlation coefficient for this data?

- A. 0.68
  - B. 0.98
  - C. 1.41
  - D. 25.22
59. If a linear regression gives an  $r$  value of 0.92, this would indicate that the data is
- A. not linear.
  - B. perfectly linear.
  - C. approximately linear with a positive slope.
  - D. approximately linear with a negative slope.

60. A ramp 20 feet long and 12 feet high is pushed against a box of the same height and 40 feet long (as shown below).



What is the slope of the ramp from A to B?

- A.  $\frac{1}{5}$
- B.  $\frac{2}{5}$
- C.  $\frac{3}{5}$
- D.  $\frac{4}{5}$

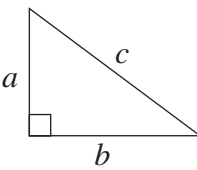
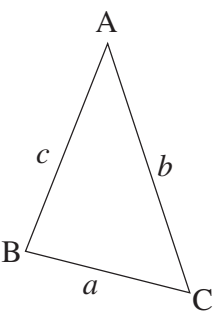
**END OF EXAMINATION**

# STUDENT REFERENCE

## UNIT CONVERSION

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

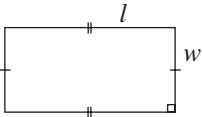
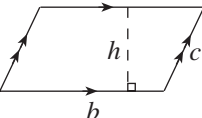
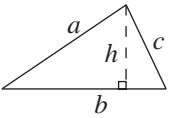
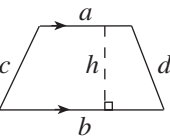
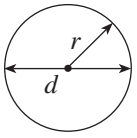
## FORMULAE

Trigonometry	Other Formulae
<p>(Put your calculator in Degree Mode)</p> <ul style="list-style-type: none"> <li>Right triangles</li> </ul> <p><b>Pythagorean Theorem</b></p> $a^2 + b^2 = c^2$ $\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$ $\cos A = \frac{\text{adjacent}}{\text{hypotenuse}}$ $\tan A = \frac{\text{opposite}}{\text{adjacent}}$ <ul style="list-style-type: none"> <li>Other triangles, use Sine Law or Cosine Law</li> </ul> <p><b>Law of Sines</b></p> $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$ <p><b>Law of Cosines</b></p> $a^2 = b^2 + c^2 - 2bc \cos A$ <p>or <math display="block">\cos A = \frac{b^2 + c^2 - a^2}{2bc}</math></p>  	<ul style="list-style-type: none"> <li>The equation of a line: <math>y = mx + b</math></li> <li>The slope of a line: <math>m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}</math></li> <li>The distance between two points: <math>d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}</math></li> <li>The midpoint formula: <math>\left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)</math></li> </ul>

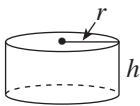
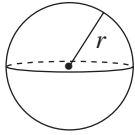
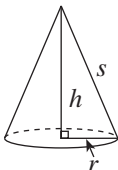
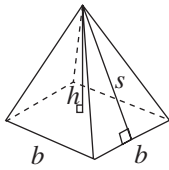
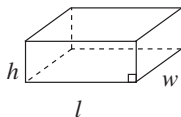
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## GEOMETRIC FORMULAE

Key Legend	
$b$ = base $h$ = height $l$ = length $w$ = width $s$ = slant height	$d$ = diameter $r$ = radius $P$ = perimeter $C$ = circumference $A$ = 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  $\pi$  programmed in your calculator rather than the approximation of 3.14.

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

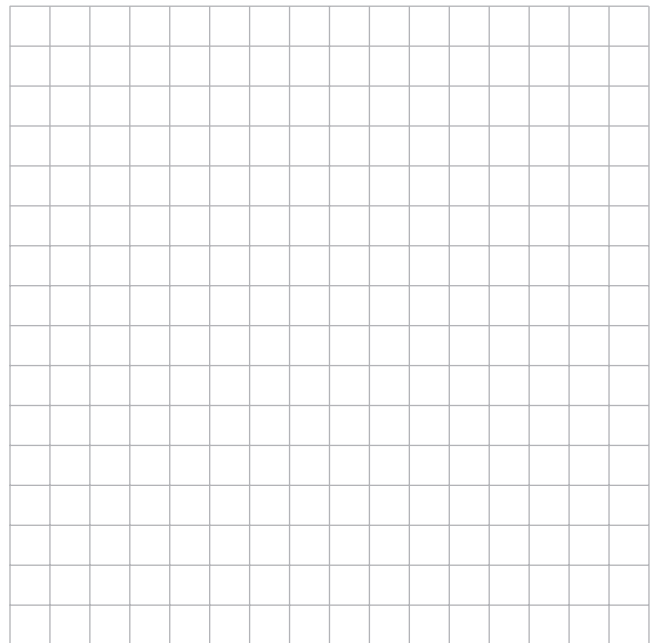
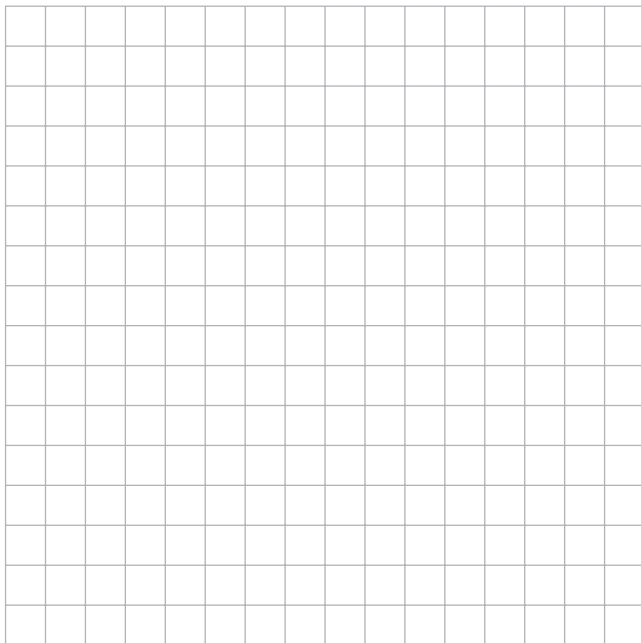
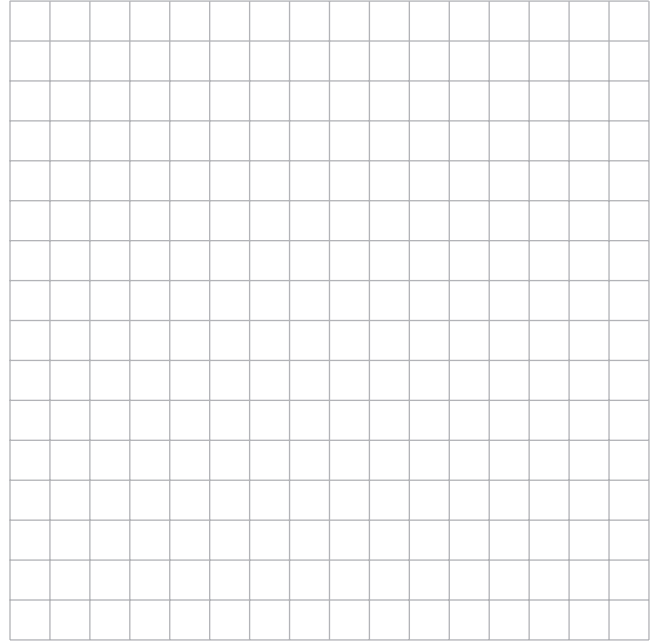
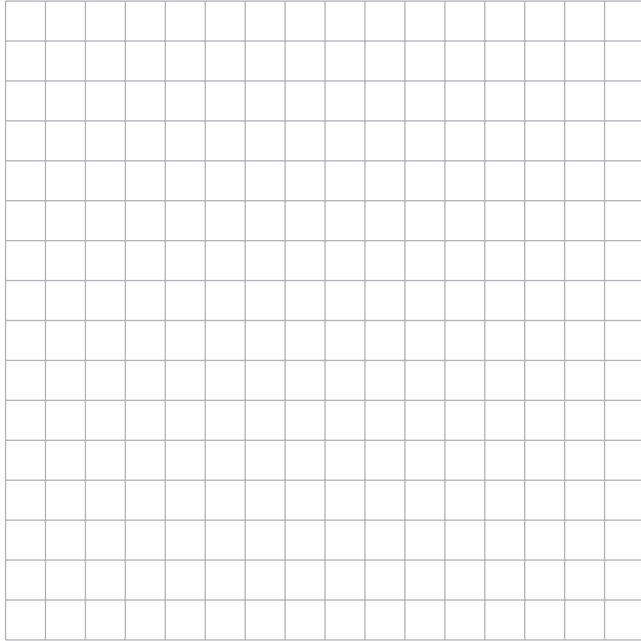
**NOTE:** Use the value of  $\pi$  programmed in your calculator rather than the approximation of 3.14.

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## **ROUGH WORK SPACE**

**ROUGH WORK FOR GRAPHING**

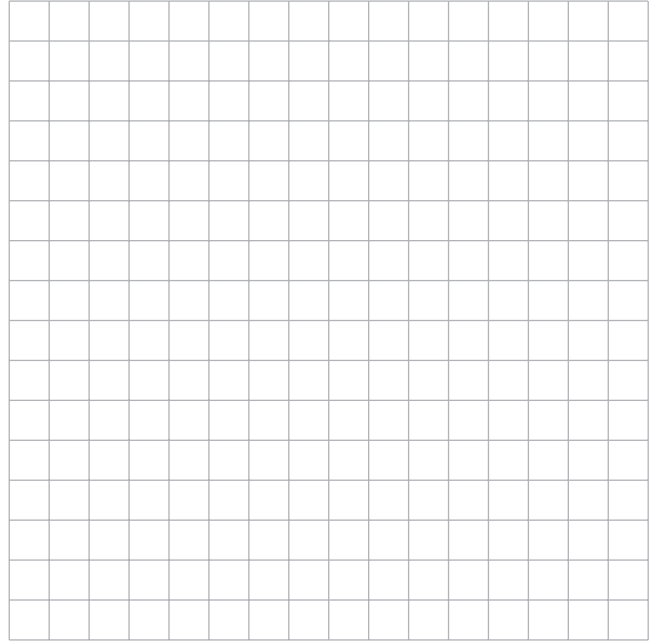
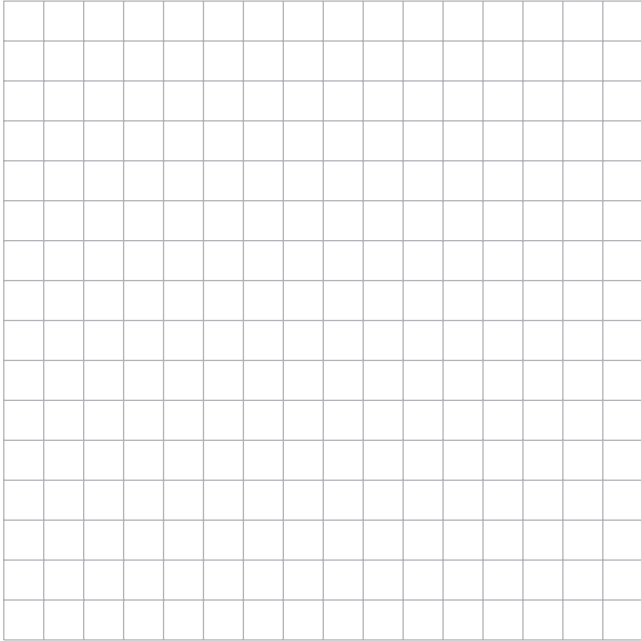
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# ROUGH WORK FOR GRAPHING

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**ROUGH WORK SPACE**

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## **ROUGH WORK SPACE**