Math 9 Name: Key

Math 9 Final Exam Review Test – NOT FOR MARKS

Section A: Multiple Choice – 1 mark each

Choose the best response for each multiple-choice question. Marks will not be given for work done in section A.

1. After completing the multiplication: $\frac{2}{5} \times \frac{3}{7}$ What is the numerator?

   a. 3
   c. 6
   b. 35
   d. 2

2. After changing the mixed number, $2\frac{1}{3}$, to an improper fraction, what is the denominator?

   a. 3
   c. 6
   b. 2
   d. 7

3. Which of the following is a reduced form of: $\frac{12}{38}$

   a. $\frac{1}{3}$
   c. $\frac{6}{19}$
   b. $\frac{6}{18}$
   d. $\frac{3}{7}$

4. Simplify the following fraction work: $\frac{2}{5} \times \frac{2}{4}$

   a. $\frac{4}{20}$
   c. $\frac{2}{10}$
   b. $\frac{4}{5}$
   d. $\frac{1}{5}$

5. Reduce the following fraction BEDMAS: $\frac{2}{3} - \frac{5}{6}$

   a. $\frac{-1}{6}$
   c. $\frac{-1}{3}$
   b. $\frac{-3}{-3}$
   d. 1

6. What should be in the blank spaces: $4^5 = (\ )(\ )(\ )(\ )(\ )$

   a. 5
   c. 20
   b. 4
   d. 1

7. Which of the following properly represents $\left(\frac{-1}{2}\right)^3$?

a. $-\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)$

c. $\left(\frac{-1}{2}\right)\left(\frac{-1}{2}\right)\left(\frac{-1}{2}\right)$

b. $\left(\frac{-1}{2}\right)(3)$

d. $-\left(\frac{-1}{2}\right)\left(\frac{-1}{2}\right)\left(\frac{-1}{2}\right)$

8. After simplifying: $(6^8)(6^3)$ What is the exponent on the base of '6'?

a. 5

c. 12

b. 3

d. 11

9. Simplify the following expression of powers: $(2^2 \cdot 4^3)^3$

a. $2^2 \cdot 4^3$

c. $2^5 \cdot 4^6$

b. $2^9 \cdot 4^6$

d. $2^6 \cdot 4^9$

10. Simplify the following expression of powers: $\frac{3^6 \cdot 5^4}{3^6 \cdot 5^2}$

a. 5^2

c. $3^6 \cdot 5^2$

b. $3 \cdot 5^2$

d. 5^4

11. What is the side length of the square to the right?

Area = 80 m²

a. 8.0

c. 9.0

b. 8.9

d. 6400

12. Are the following two objects 'similar'?

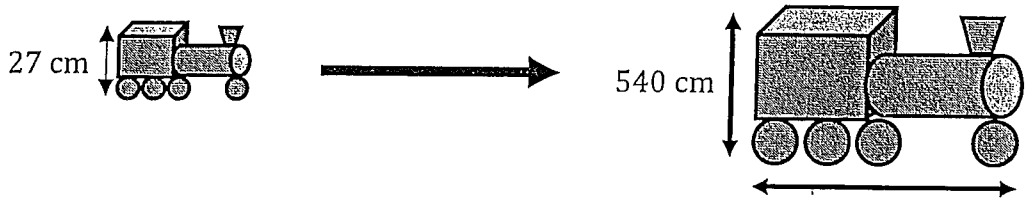
a. No, object A is too wide!

c. No, object B is too wide!

b. No, object B is too tall!

d. Yes, they are similar!

13. What is the scale factor for the following enlargement?



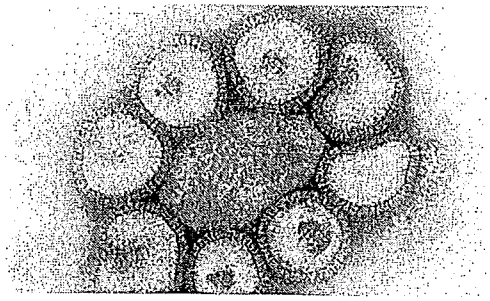
a. 1 : 20

c. 50 : 1

b. 20 : 1

d. 1 : 50

14. A flu virus is pictured to the right, how large is it in real life if the diagram version is 4 cm across?



800 : 1

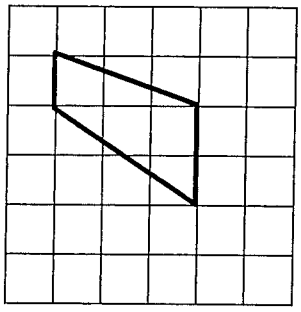
a. 0.005 cm

c. 5 cm

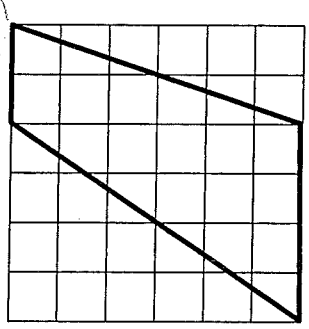
b. 3200 cm

d. 0.032 cm

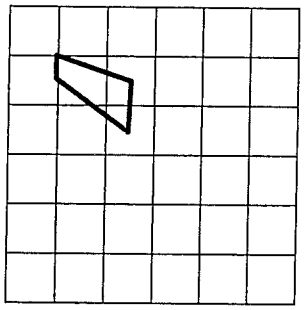
15. If the following object is re-drawn to a scale of 2 : 1. Which of the following is correct?



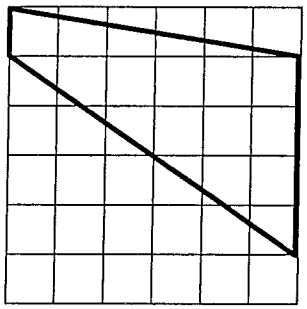
a.



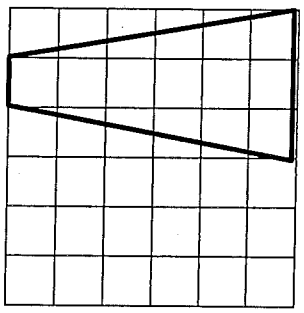
c.



b.



d.



16. A triangle has a base of 10 cm. If it is drawn at a scale of 1:10, what is the size of the new base?

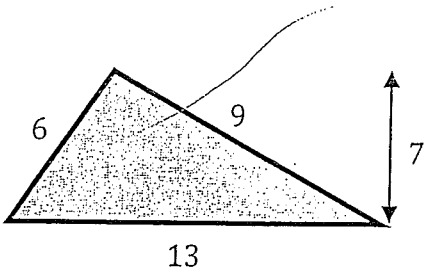
a. 100 cm

c. 10 cm

b. 1 cm

d. 0.1 cm

17. What is the area of the triangle to the right?



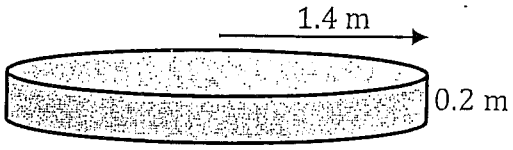
a. 28

c. 46

b. 702

d. 35

18. What is surface area of the disk to the right?



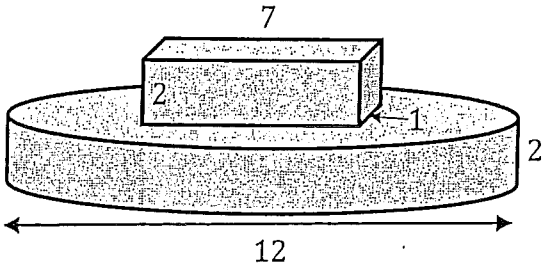
a. 14.1 m^2

c. 14.1 m

b. 52.8 m^2

d. 52.8 m

19. What is the area of overlap in the following diagram?



a. 7

c. 2

b. 14

d. 334

20. A baby sitter placed an ad in a newspaper: "$5 travel charge plus $4 per hour." Which equation best represents the babysitter?

a. $Cost = 5 \cdot Hours + 4$

c. $Hours = 5 \cdot Cost + 4$

b. $Hours = 4 \cdot Cost + 5$

d. $Cost = 4 \cdot Hours + 5$

21. What is the rate of change for the table to the right?

x	y
-1	0
0	4
1	8

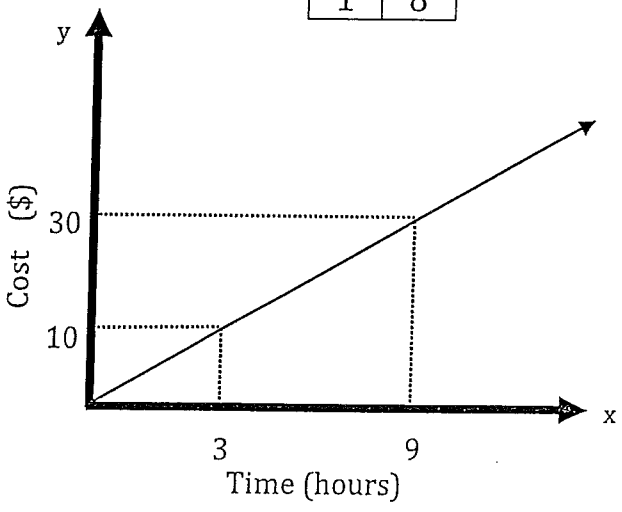
a. 1

c. -4

b. 4

d. -1

22. How much does it cost to rent a boat for 6 hours if you use the cost-graph to the right?



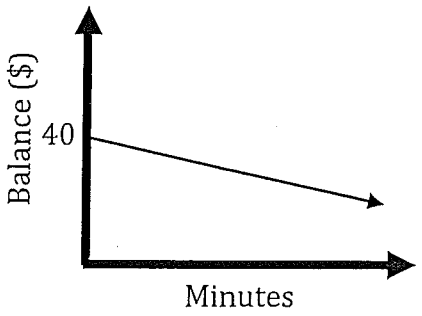
a. $30

c. $20

b. $15

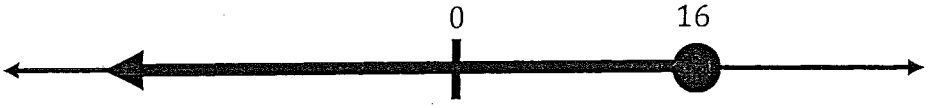
d. $60

23. If the balance on a cell phone account if \$40 and each minute costs \$0.25, how long can a person talk before running out of money?



a. 160 minutes
b. 10 minutes
c. 1000 minutes
d. 400 minutes

24. What inequality best represents this graph?



a. $x > 16$
b. $x < 16$
c. $x \geq 16$
d. $x \leq 16$

25. Solve the following inequality: $-3x + 4 > 7$

a. $x < -1$
b. $x > -1$
c. $x < 1$
d. $x > 1$

26. Which of the following is a binomial?

a. 3
b. $2x + 3$
c. $7x^2 + 2x + 3$
d. $7 - x + y$

27. What is the degree of the following polynomial?

$$6m^2 + 5x^4 - 3$$

a. 2
b. 4
c. 1
d. 8

28. How many terms are there once the following polynomial multiplication is fully simplified?

$$(x-2)(x+5)$$

a. 2
b. 4
c. 1
d. 3

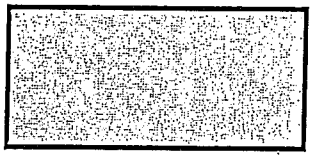
29. Consider: $4m^2 + 9x^4 - 7$ Which is not a constant or coefficient?

a. 4
b. 9
c. -7
d. 2

30. Simplify the following polynomial expression: $(4y-5x^2)+(-4y-2x)$

a. $8y-7x^2$
c. $-5x^2+2x$
b. $-7x^2$
d. $-5x^2-2x$

31. What is the number of lines of symmetry for the object?

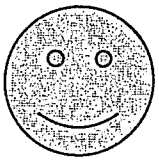


a. 1
c. 3
b. 2
d. 4

32. What is the angle of rotation for the following object?

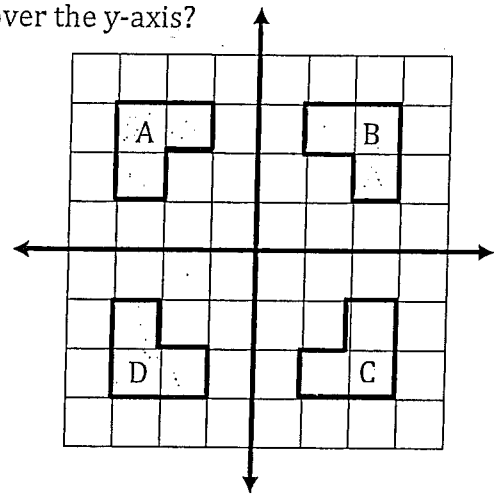
a. 90°
c. 180°
b. 360°
d. 270°

33. What is the maximum order of rotation for the object?



a. 1
c. 3
b. 2
d. 4

34. Which object is the correct reflection of object 'D' over the y-axis?

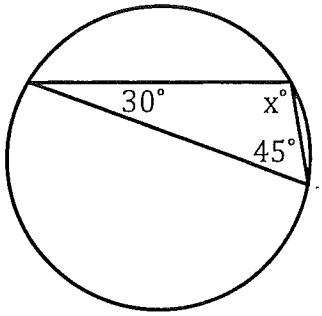


a. A
c. C
b. B
d. D

35. Which of the following describes a chord? "A line of a circle...

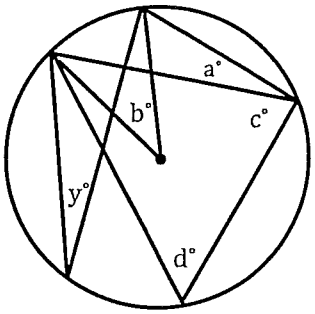
a. joining center and edge."
c. touching the circle once."
b. joining center to center."
d. joining edge to edge."

36. What is the measure of angle 'x'?



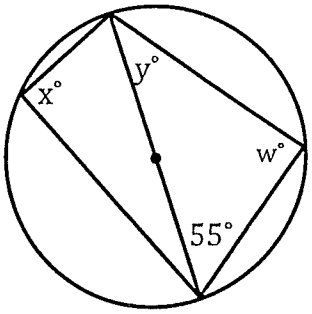
a. 30°
c. 105°
b. 45°
d. 110°

37. Which angle is the same as angle 'y'?



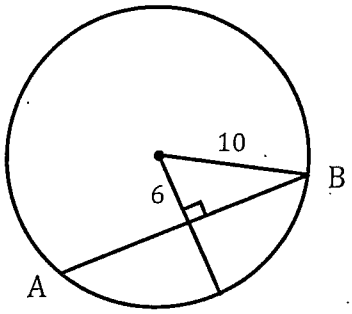
a. $\angle a$
c. $\angle c$
b. $\angle b$
d. $\angle d$

38. Which of the following is true for the diagram to the right?



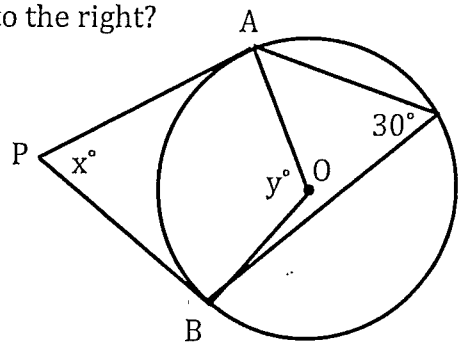
a. $\angle x = 90°$
c. $\angle y = 55°$
b. $\angle y = 90°$
d. $\angle w = 35°$

39. What is the length of chord AB?



a. 4
c. 16
b. 8
d. 20

40. Which of the following is not true for the diagram to the right?



a. $\angle x = 60°$
c. $\angle y = 60°$
b. AP = BP
d. AO = BO

41. What is the probability that you roll a 6-sided die twice and get a '5' both times?

a. 0.25
c. 0.03
b. 0.50
d. 0.17

42. What is the probability of rolling a '3' on a 6-sided die and flipping 'heads' on a fair coin?

a. 0.08
c. 0.25
b. 0.17
d. 0.04

43. John wants to buy either a hat or a shirt. He wants the hat/shirt to be either red or blue. What is the probability that he chooses a red hat?

a. 0.50
c. 0.17
b. 0.25
d. 0.08

44. Which of the following is a question with bias?

a. Do you like to run cross-country?
b. Do you eat at the school cafeteria?
c. 60% of people hate taking the bus. Do you like taking the bus?
d. Are you too poor to afford formal grad clothing?

45. Which of the following should be found out using a census?

a. How many students at university have IPODs?
b. Do pet owners talk to their animals like they're people?
c. Where does my family want to go for dinner?
d. How many fish in the lake have brown spots?

Section B: Written Response – Marks as indicated

Show all work for full marks. ZERO marks will be given for answers only.
Answer in the space provided where appropriate.

46. Simplify the following fraction BEDMAS: $\left(\frac{1}{2}+\frac{1}{3}\right)\div\frac{1}{6}$

/3

$\left(\frac{3}{6}+\frac{2}{6}\right)\div\frac{1}{6}$

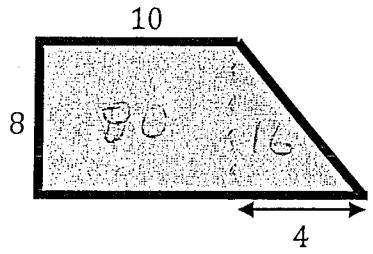
$\frac{5}{6}\div\frac{1}{6}=\frac{5}{6}\times\frac{6}{1}$

5

47. Determine the area of the following composite shapes:

a.

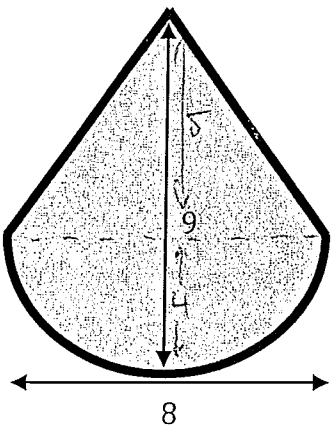
/1



96

b.

/2

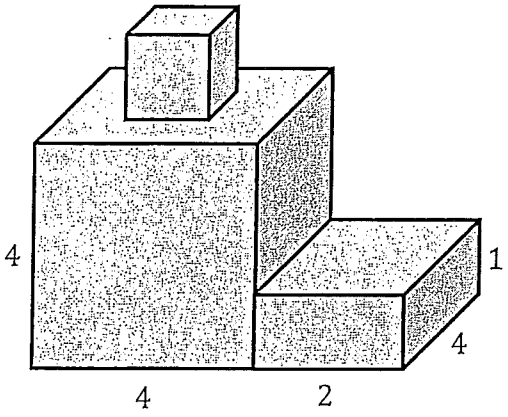


$05\times5\times8=20$

$\frac{1}{2}\pi 4^2=25.1$

45.1

48. The small cube has side lengths all equal to 1. What is the area of the following composite object?



1
2
2
16-1
16+2
16x2
12
8 x 2
2 x 2
4

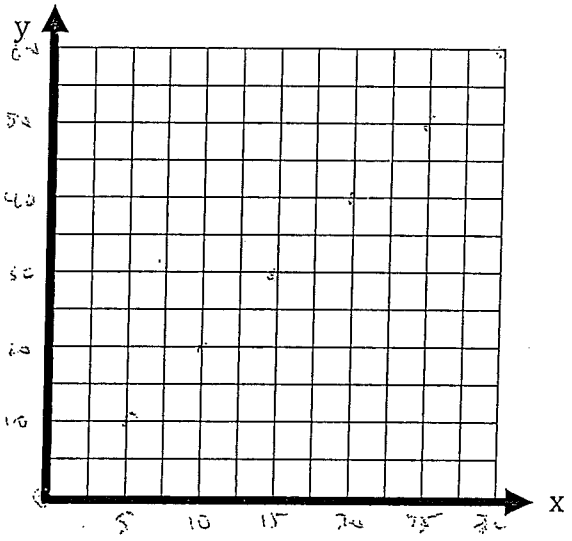
/3

120

49. Complete the table and graph the following data on the grid provided:

/3

x	y
0	0
5	10
10	20
15	30
20	40
25	50
30	60



50. Solve each of the following equations:

a. $-6m = 36$ /1

$\frac{-6m}{-6} = \frac{36}{-6}$

$m = \frac{36}{-6} = -6$

$m = -6$

b. $\frac{p}{3} + 3 = 11$ /2

$3 \cdot \frac{p}{3} = 8 \times 3$

$p = 24$

$p = 24$

51. Write an inequality for each statement:

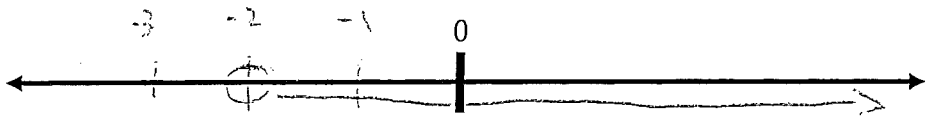
a. Mr. Belvedere can spend up to 9.5 hours sleeping on Saturday. /1

$t \leq 9.5$

b. Each item costs over $25. /1

$C > 25$

52. Graph the following inequality below: $x > -2$ /1



53. Simplify the following polynomial expressions:

a. $(2x+3)-(4x-3)$ /1

$-2x+6$

b. $4x\cdot(2x+3)$ /1

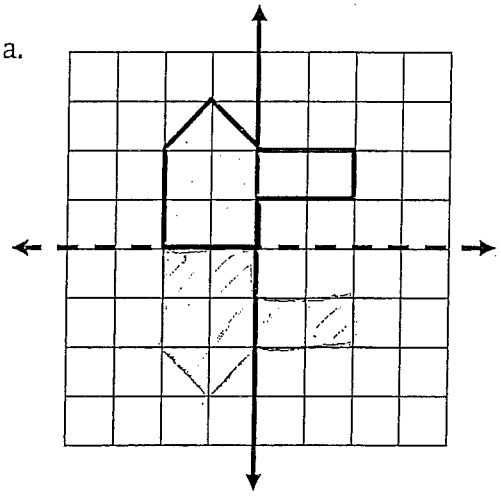
$8x^2+12x$

c. $(2x+3)(4x-3)$ /2

$8x^2+6x-9$

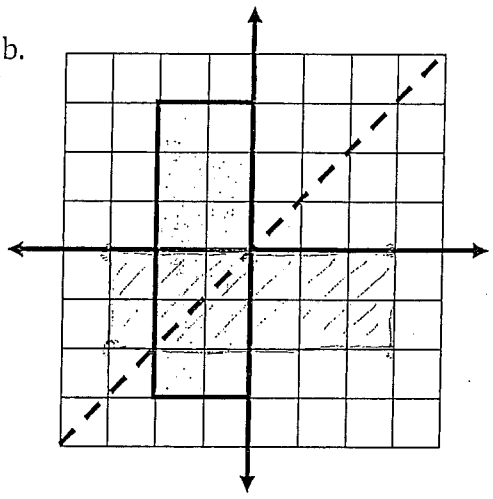
54. Reflect the following objects over the indicated line of reflection: /4

a.



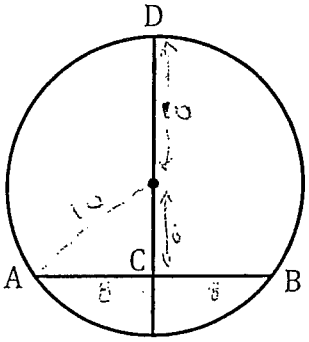
Line of reflection → x-axis

b.



Line of reflection → y = x

55. The following is a diagram of a train tunnel through a mountain. Chord AB represents the level ground where the track is. If the radius of the circle is 10 meters and the length from C to D is 16 meters, what is the width of AB? /2



$10^2-6^2=64$

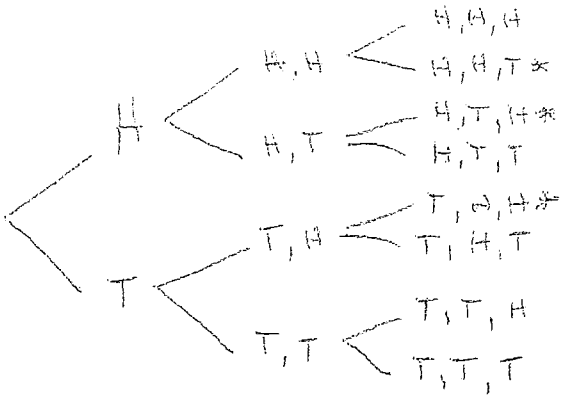
$AC=\sqrt{64}=8$

$AB=16$

16

56. Create a sample space for flipping a fair coin three times. **What is the probability of getting exactly one 'tail'?**

/3



$\frac{3}{8} = 0.$

0.375

57. The following questions were asked in order:

- Most people dislike the cafeteria, what do you dislike most? [4]
- Are you satisfied with the food quality in the cafeteria? [3]
- Is there enough choice in the cafeteria on a day-to-day basis? [2]
- Do you eat in the cafeteria or bring your own lunch? [1]

a. Number the questions 1, 2, 3, or 4 in appropriate order. /1

b. Which question is 'biased'? 4 /1

58. Create a survey question to investigate if the Saanich council should build a new running track.

/2