Review - Unit #4 - Day #3.

Multiple Choice.

1.	D	8.	B	15.	C
2.	A	9.	C	16.	D
3.	C	10.	C		
4.	B	11.	D		
5.	A	12.	A		
6.	D	13.	C		
7.	B	14.	B		

17. $R = 6(13-1)+4$
$= 6(12)+4$
$= 76$

18. $W = 3t + 2$.

19. a) $A = 35n + 540$.

b) $A = 35(8) + 540$
$= 280 + 540$
$= \$820.00$

20. a) a) $F = 1.75n + 2.50$
b) $F = 1.75(28) + 2.50$
$F = 49 + 2.50$
$F = \$51.50$

22. Create a table of values for the linear relation $y = 4 - 4x$, then graph the relation.
Use values of x from 0 to 6.

x	0	1	2	3	4	5	6
y	4	0	-4	-8	-12	-16	-20

22. $x=0$ $y = 4-4(0)$ $y = 4-0$ $y = 4$

$x=1$ $y = 4-4(1)$ $y = 4-4$ $y = 0$

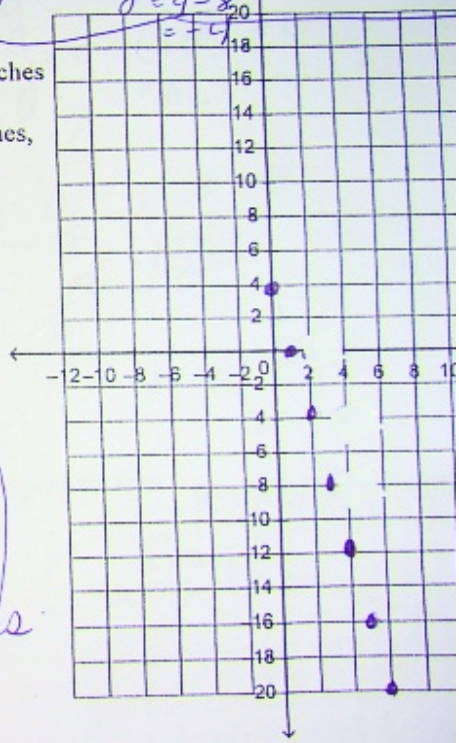
$x=2$ $y = 4-4(2)$ $y = 4-8$ $y = -4$

23. Dorina is having a party. She estimates that she will need 5 sandwiches for each guest, and 12 extra sandwiches for unexpected guests.
a) Write an equation that relates the total number of sandwiches, T, to the number of guests, p.
b) How many sandwiches will Dorina need for 16 guests?

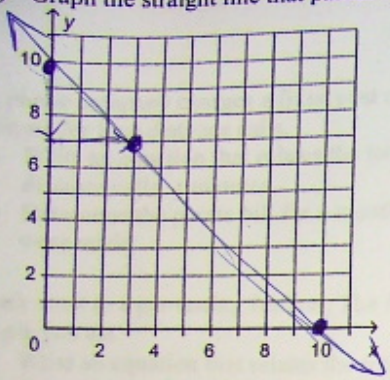
23. a) $y = 5x + 12$

$T = 5p + 12$

b) $T = 5(16) + 12$
$T = 80 + 12$
$T = 92$ sandwiches



4. a) Graph the straight line that passes through the points (0, 10), (3, 7), and (10, 0).

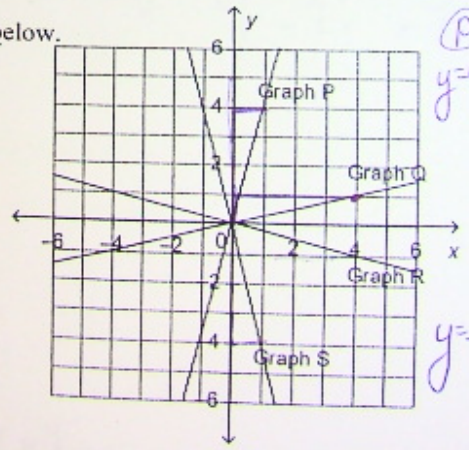


$\frac{-3}{3} = -1$

b) Write an equation to describe the line. → $y = -1x + 10$

5. Match each equation with a graph on the grid below.

i) $y = -0.25x + 0$ (R)
ii) $y = 4x + 0$ (P)
iii) $y = -4x + 0$ (S)
iv) $y = 0.25x + 0$ (Q)



(P) $y = 4x + 0$

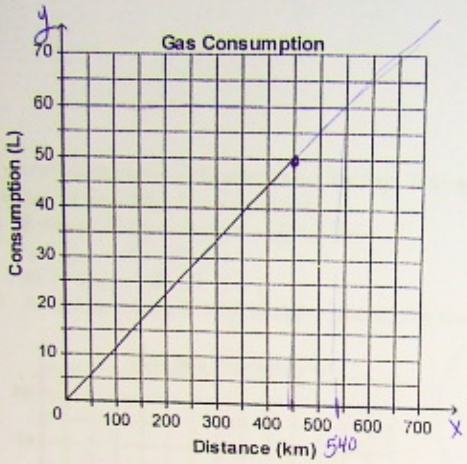
$y = \frac{1}{4}x + 0$ (Q)

$y = -\frac{1}{4}x + 0$ (R)

$y = -4x + 0$ (S)

This graph shows the gas consumption rate of a car

26. This graph shows the gas consumption rate of a car.
    a) Estimate the volume of gas required to travel 630 km.
    b) Estimate the distance the car can travel on 60 L of gas.

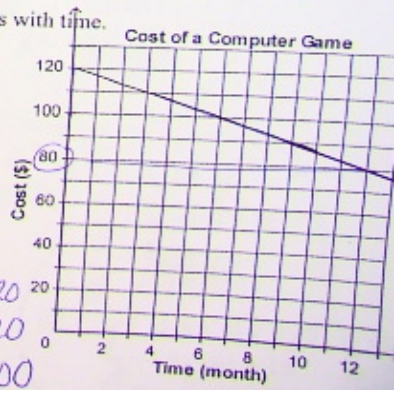


50
450

a) $y = 0.11x + 0$
$y = 0.11(630) + 0$
$y = 70\text{ L}$

b) $y = 0.11x + 0$
$\frac{60}{0.11} = \frac{0.11x}{0.11}$
$x = 540\text{ Km}$

27. This graph shows how the cost of a new computer game changes with time.
Estimate the cost of the game 12 months after it is released.



Graph → $80.00

$\frac{-20}{6}$

Equation → $y = -3.3x + 120$
$y = -40 + 120$
$y = \$80.00$

m

a) $B = 0.53p + 1.07q + 2.35$

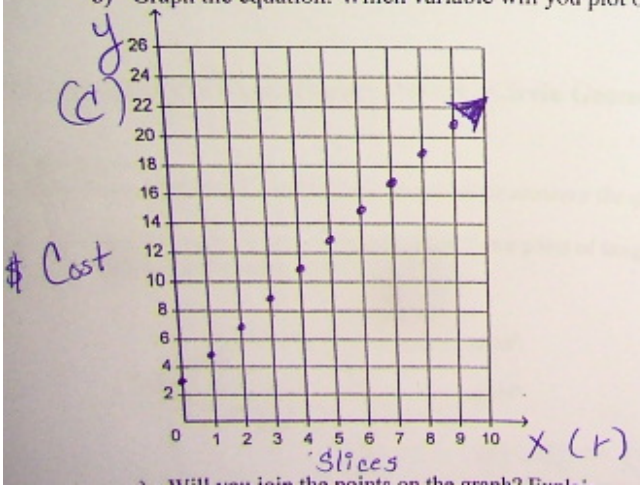
b) $B = 0.53(53) + 1.07(31) + 2.35$

$B = 28.09 + 33.17 + 2.3$

$B = \$63.61$

28. A phone company charges a fixed cost of \$2.35 per month, plus \$0.53 per minute for local calls and \$1.07 per minute for long distance calls.
    a) Write an equation that relates the total monthly cost, B dollars, to the local calls, p minutes, and long distance calls, q minutes.
    b) Determine the phone bill for a month in which 53 min of local calls and 31 min of long distance calls were made.

29. Amir went to a pie-tasting festival. The festival charges an admission fee of \$3.00, plus \$2.00 for every slice of pie you eat.
    a) Write an equation that relates the total cost, C dollars, to the number of slices of pie you eat, r.
    b) Graph the equation. Which variable will you plot on the horizontal axis? Explain your reasoning.



a) $C = 2r + 3$

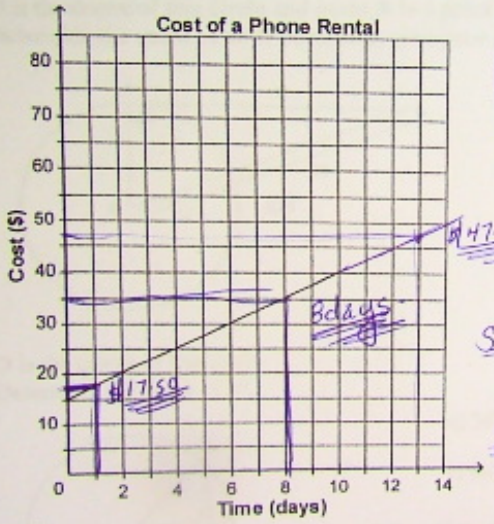
$y = 2x + 3$

$2r + 3 = 17$
$-3 \quad -3$
$\frac{2r}{2} = \frac{14}{2}$
$r = 7$ slices

30. A resort rents out mobile phones by the day. This graph shows how the cost to rent a phone relates to t number of days the phone is rented.

a) Estimate the cost to rent a phone for:
   i) 1 day $17.50
   ii) 13 days $47.50

b) A customer paid $35.00 to rent a phone. For how many days did the customer rent the phone?

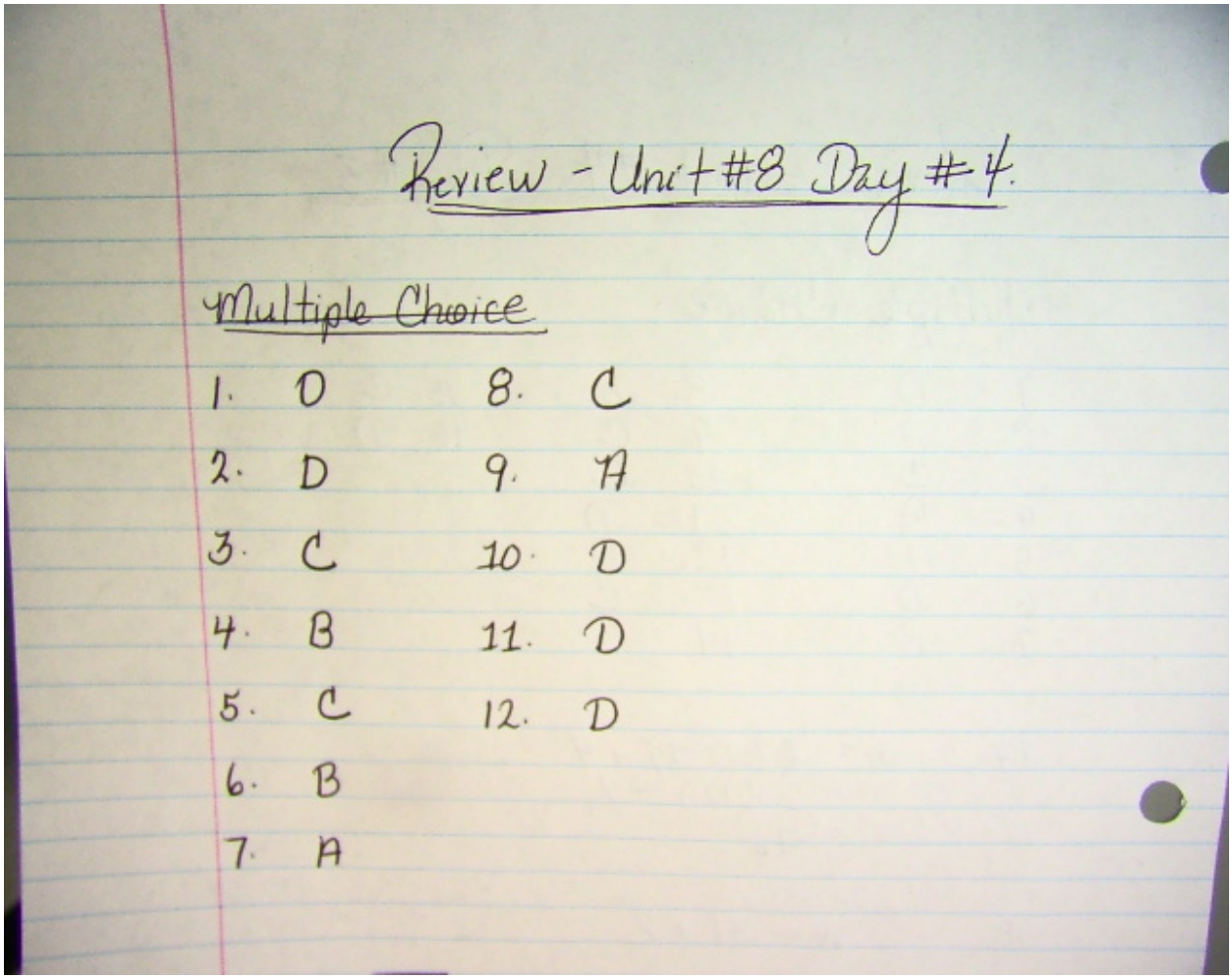


Slope: $\frac{5}{10} = \$2.50$
y-int: $= 15$

b) $35 = 2.50x + 15$
$2.50x + 15 = 35 - 15$
$\frac{2.50x}{2.50} = \frac{20}{2.50}$
$x = 8$ days

a) i) $y = \frac{1}{2}x + 15$
$y = 2.5(1) + 15$
$y = \$17.50$

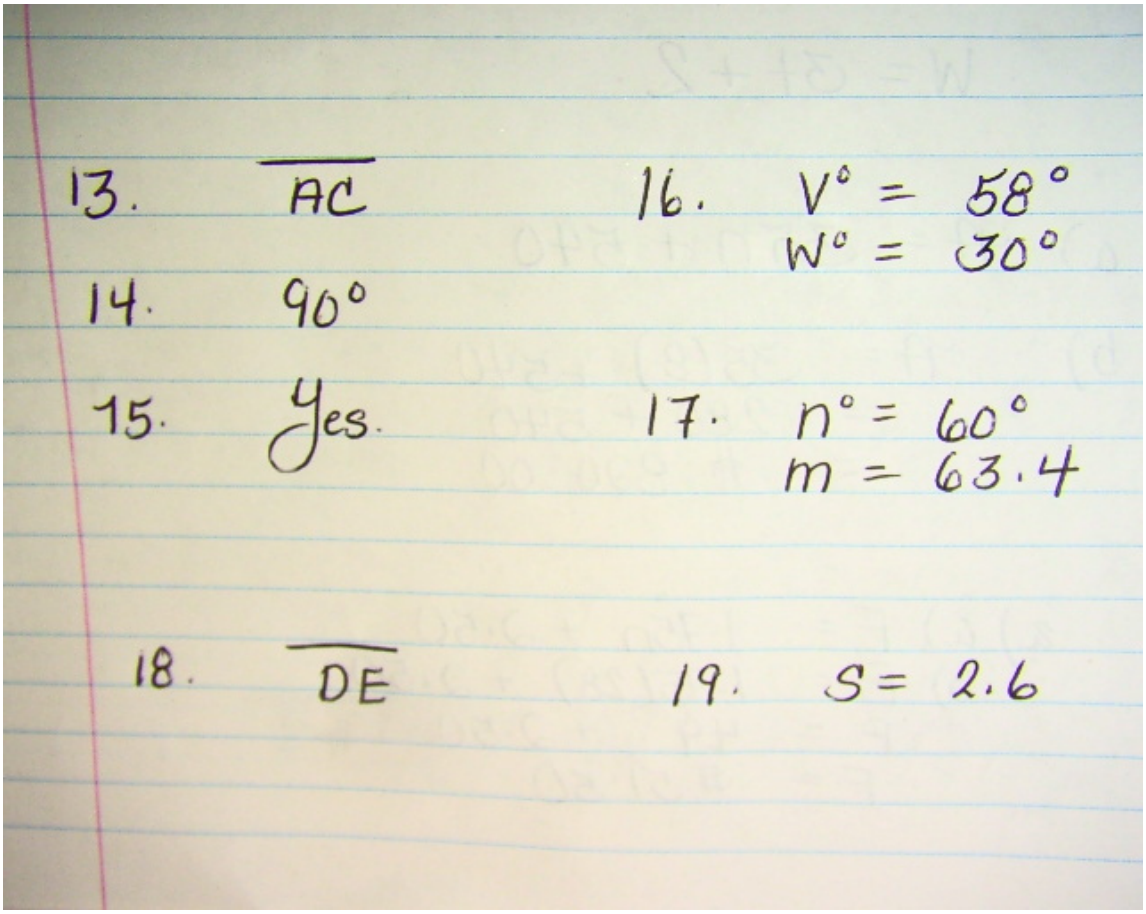
ii) $y = 2.5(13) + 15$
$y = 32.50 + 15$
$y = \$47.50$



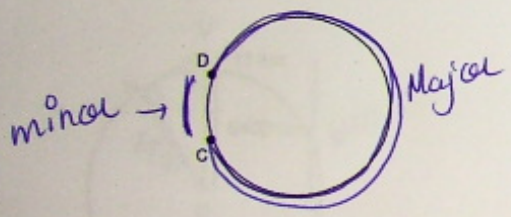
Review - Unit #8 Day #4.

Multiple Choice

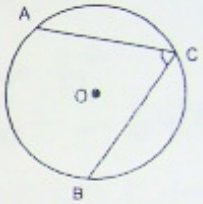
1.	D	8.	C
2.	D	9.	A
3.	C	10.	D
4.	B	11.	D
5.	C	12.	D
6.	B		
7.	A		


13. $\overline{AC}$
14. 90°
15. Yes.
16. V° = 58°
W° = 30°
17. n° = 60°
m = 63.4
18. $\overline{DE}$
19. S = 2.6

20. Label the major arc CD and the minor arc CD of this circle.

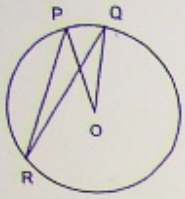


21) O is the centre of this circle. Is ∠ACB a ce angle or an inscribed angle?



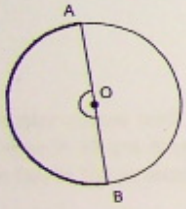
Inscribed

22. O is the centre of this circle.
In this circle, identify the inscribed angle and the central angle subtended by the same minor arc.

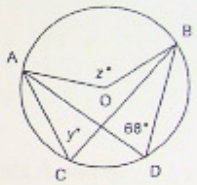


∠POQ Central
∠PRQ Inscribed

23. Point O is the centre of the circle.
Arc AB is a semicircle.
What is the measure of ∠AOB? 180°

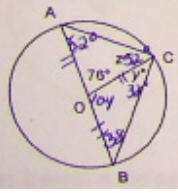


24. O is the centre of this circle.
Determine the values of $y°$ and $z°$.



$y° = 68°$
$z° = 136°$

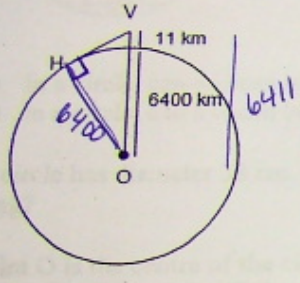
25. Point O is the centre of the circle.
Determine the values of $y°$ and $z°$.



$z° = 52°$
$y° = 38°$

em

26. A Ruppell's Griffon Vulture holds the record for the bird with the highest documented flight altitude. It was spotted at a height of about 11 km above the Earth's surface. The radius of Earth is approximately 6400 km. How far was the vulture from the horizon, H? Calculate this distance to the nearest kilometre.



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

$a^2 = 6411^2 - 6400^2$

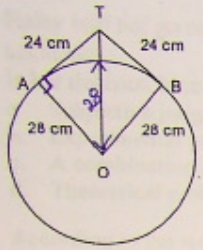
$a^2 = 41100921 - 40960000$

$a^2 = 140921$

$a = 375.4$ km

375 km

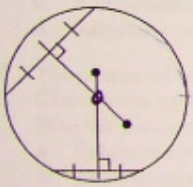
27. A circular mirror with radius 28 cm hangs from a hook.
The wire is 48 cm long and is a tangent to the circle at points A and B.
How far, to the nearest tenth, above the top of the mirror is the hook?



$c^2 = a^2 + b^2$
$c^2 = 24^2 + 28^2$
$c^2 = 576 + 784$
$\sqrt{c^2} = \sqrt{1360}$
$c = 36.9 - 28$

8.9 cm

28. Draw a point at the centre of this circle. Label the point O.
How do you know your answer is correct?

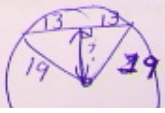


The lines perpendicular to a chord always run through the centre. Therefore they will intersect in the middle/centre Point O.

29. a) In a circle, can a chord be longer than a diameter of the circle? Explain. → NO diameter is the longest chord in a circle.
b) In a circle, can a chord be shorter than a radius of the circle? Explain. yes

30. A circle has diameter 38 cm. How far from the centre of the circle, to the nearest centimetre, is a chord 26 cm long?

30.



32. Point O is the centre of the circle.
Determine the values of $x°$, $y°$, and $z°$.

29. a) In a circle, can a chord be longer than a diameter of the circle? Explain. → NO diameter is the longest chord in a circle.
b) In a circle, can a chord be shorter than a radius of the circle? Explain. yes

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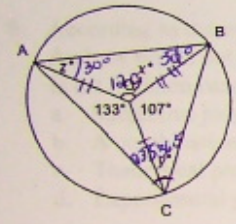
32. Point O is the centre of the circle.
Determine the values of $x°$, $y°$, and $z°$.



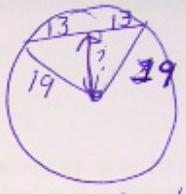
$x° = 120°$

$z° = 30°$

$y° = 23.5 + 36.5$

$= 60°$

30.



$a^2 = c^2 - b^2$

$a^2 = 19^2 - 13^2$

$a^2 = 361 - 169$

$\sqrt{a^2} = \sqrt{192}$

$a = 13.9$ cm

Identify the choice that best completes the statement or answers the question.

D 1. The last three days Alexa had a test and ate an energy bar on her way to school that morning, she did well on the test. Today she had a test, so she ate an energy bar on her way to school.
Was her decision based on theoretical probability, experimental probability, or subjective judgment?
a. A combination of theoretical probability and subjective judgment
b. Theoretical probability
c. Subjective judgment
d. Experimental probability

B 2. Jon's coworkers pool their money so they can buy more lottery tickets and increase their chance of winning.
Is their decision based on theoretical probability, experimental probability, or subjective judgment?
a. A combination of theoretical and experimental probability
b. Theoretical probability
c. Experimental probability
d. Subjective judgment

B 3. Leila arrives at the airport 3 hours before her flight to Chicago because each of the past 4 times she has travelled to the USA, it took her over 1.5 h to get through check-in and security.
Is her decision based on theoretical probability, experimental probability, or subjective judgment?
a. Subjective judgment
b. Experimental probability
c. A combination of theoretical probability and subjective judgment
d. Theoretical probability

A 4. Haley will not go on a cruise because the boat may sink even though cruise ships are very rarely involved in accidents.
Is her decision based on theoretical probability, experimental probability, or subjective judgment?
a. Subjective judgment
b. Experimental probability
c. A combination of theoretical and experimental probability
d. Theoretical probability

A 5. According to the weather forecast, there is a 90% chance of rain.
Martin had planned to go running but decides to go to the gym instead so he doesn't get wet.
Is his decision based on theoretical probability, experimental probability, or subjective judgment?
a. Experimental probability
b. Theoretical probability
c. A combination of theoretical probability and subjective judgment
d. Subjective judgment

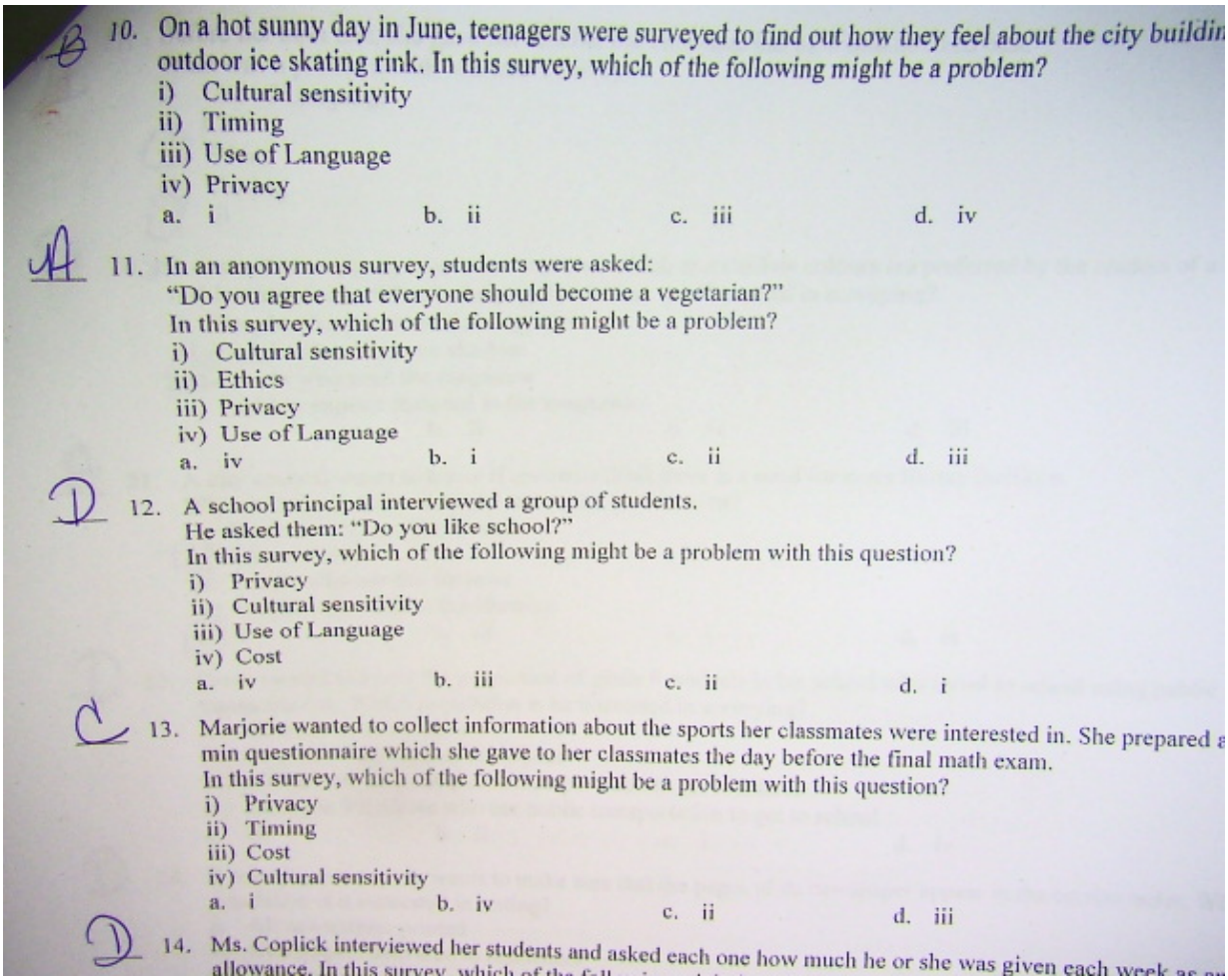
d. Subjective judgment

A 6. The chance of winning a prize in a lottery was 15%.
Claudia was having a lucky day, so she bought a ticket.
Was her decision based on theoretical probability, experimental probability, or subjective ju
a. Subjective judgment
b. Experimental probability
c. Theoretical probability
d. A combination of experimental probability and subjective judgment

D 7. A sports club is going to have a draw for a prize during its awards ceremony. Sasha did not
because she was not feeling lucky, and almost every club member had purchased a ticket.
Was her decision based on theoretical probability, experimental probability, or subjective ju
a. Subjective judgment
b. Experimental probability
c. Theoretical probability
d. A combination of theoretical probability and subjective judgment

A 8. According to the weather forecast, there is a 90% chance of snow, with accumulations of up
Andrew drives out to see his friends because he thinks the weather will not be as bad as it is
Is his decision based on theoretical probability, experimental probability, or subjective judgm
a. Subjective judgment
b. A combination of experimental probability and subjective judgment
c. Theoretical probability
d. Experimental probability

B 9. Adam boards the last car of the train because he's noticed in the past that the last car always h
seats.
Is his decision based on theoretical probability, experimental probability, or subjective judgm
a. Subjective judgment
b. Experimental probability
c. Theoretical probability



B

10. On a hot sunny day in June, teenagers were surveyed to find out how they feel about the city buildi outdoor ice skating rink. In this survey, which of the following might be a problem?
    i) Cultural sensitivity
    ii) Timing
    iii) Use of Language
    iv) Privacy
    a. i b. ii c. iii d. iv

A

11. In an anonymous survey, students were asked:
    "Do you agree that everyone should become a vegetarian?"
    In this survey, which of the following might be a problem?
    i) Cultural sensitivity
    ii) Ethics
    iii) Privacy
    iv) Use of Language
    a. iv b. i c. ii d. iii

D

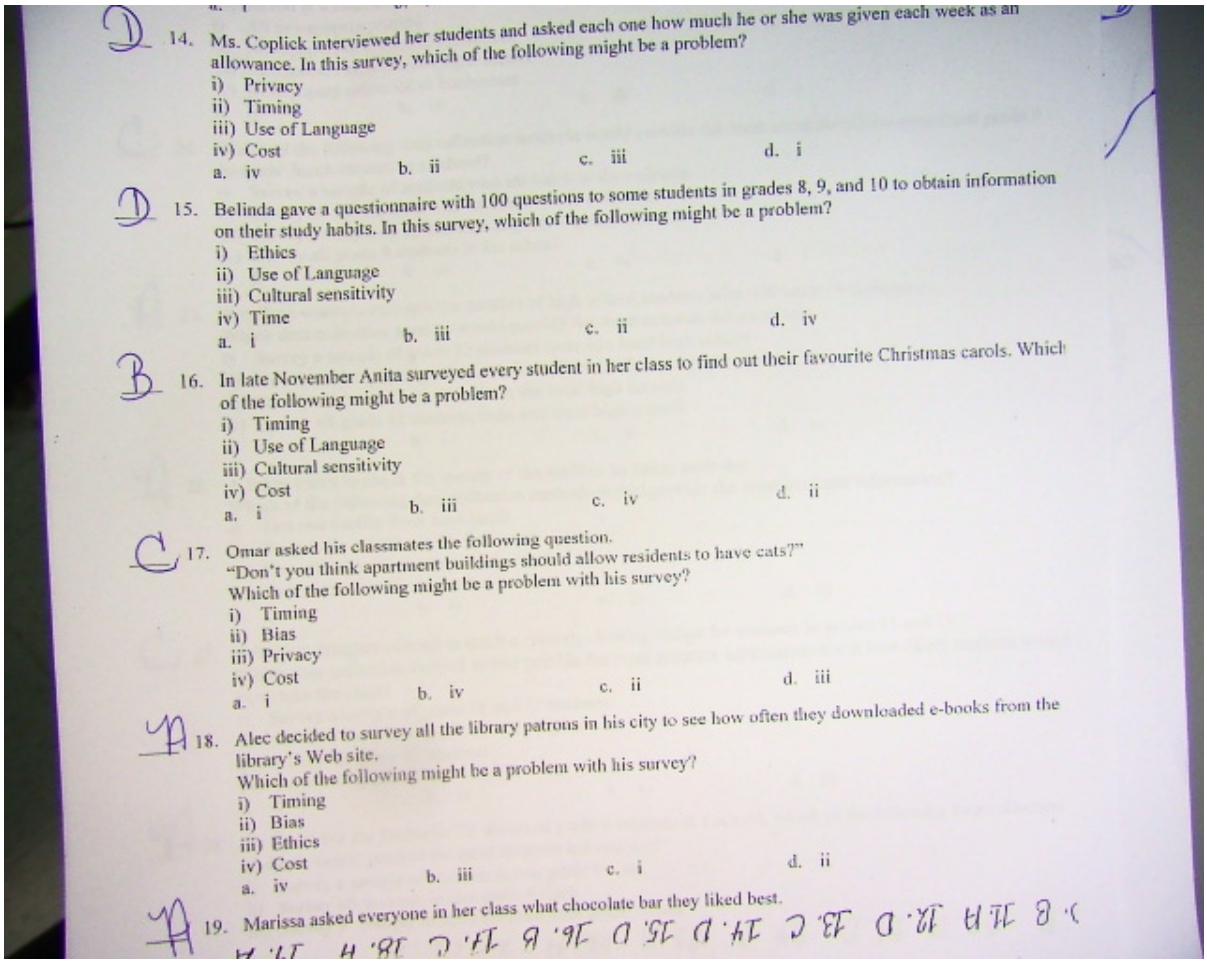
12. A school principal interviewed a group of students.
    He asked them: "Do you like school?"
    In this survey, which of the following might be a problem with this question?
    i) Privacy
    ii) Cultural sensitivity
    iii) Use of Language
    iv) Cost
    a. iv b. iii c. ii d. i

C

13. Marjorie wanted to collect information about the sports her classmates were interested in. She prepared a min questionnaire which she gave to her classmates the day before the final math exam.
    In this survey, which of the following might be a problem with this question?
    i) Privacy
    ii) Timing
    iii) Cost
    iv) Cultural sensitivity
    a. i b. iv c. ii d. iii

D

14. Ms. Coplick interviewed her students and asked each one how much he or she was given each week as a allowance. In this survey, which of the



14. Ms. Coplick interviewed her students and asked each one how much he or she was given each week as an allowance. In this survey, which of the following might be a problem?
i) Privacy
ii) Timing
iii) Use of Language
iv) Cost
a. iv b. ii c. iii d. i

15. Belinda gave a questionnaire with 100 questions to some students in grades 8, 9, and 10 to obtain information on their study habits. In this survey, which of the following might be a problem?
i) Ethics
ii) Use of Language
iii) Cultural sensitivity
iv) Time
a. i b. iii c. ii d. iv

16. In late November Anita surveyed every student in her class to find out their favourite Christmas carols. Which of the following might be a problem?
i) Timing
ii) Use of Language
iii) Cultural sensitivity
iv) Cost
a. i b. iii c. iv d. ii

17. Omar asked his classmates the following question.
"Don't you think apartment buildings should allow residents to have cats?"
Which of the following might be a problem with his survey?
i) Timing
ii) Bias
iii) Privacy
iv) Cost
a. i b. iv c. ii d. iii

18. Alec decided to survey all the library patrons in his city to see how often they downloaded e-books from the library's Web site.
Which of the following might be a problem with his survey?
i) Timing
ii) Bias
iii) Ethics
iv) Cost
a. iv b. iii c. i d. ii

19. Marissa asked everyone in her class what chocolate bar they liked best.

A

A1 Before her next test, she gave her teacher the chocolate bar he'd said he liked best.
What was a problem with Marissa's survey?
i) Use of Language
ii) Cost
iii) Ethics
iv) Timing
a. iii b. ii c. iv d. i

D

20. A cosmetics company wants to determine which eye shadow colours are preferred by the readers of a ce
fashion magazine. What is the population they are interested in surveying?
i) People who purchase the magazine
ii) People who wear eye shadow
iii) People who read the magazine
iv) Fashion experts featured in the magazine
a. i b. ii c. iv d. iii

A

21. A city council wants to know if residents think there is a need for more library facilities.
What is the population they are interested in surveying?
i) Students who use the libraries
ii) City residents
iii) People who use the libraries
iv) People who work at the libraries
a. ii b. iii c. i d. iv

D

22. Drew wanted to know the proportion of grade 9 students in his school who travel to school using public transportation. Which population is he interested in surveying?
i) All students in his school
ii) All grade 9 students in his school
iii) All students who use public transportation to get to school
iv) All grade 9 students who use public transportation to get to school
a. iii b. ii c. i d. iv

D

23. A newspaper company wants to make sure that the pages of its newspaper appear in the correct order. W
population is it interested in testing?
i) All newspapers printed
ii) Newspapers delivered to residences
iii) Newspapers sold at newspaper stands

C 24. Which of the following data collection methods would provide the most accurate information abou students' lunch choices at a school?

i) Survey a sample of students who eat lunch in the cafeteria
ii) Survey all the students who eat lunch in the cafeteria
iii) Survey a sample of all students in grade 9 in the school
iv) Survey all grade 9 students in the school

a. ii b. iii c. iv d. i

A 25. A college wants to estimate the number of high school students who will enrol in September. Which data collection method would provide the most accurate information?

i) Survey a sample of grade 12 students from one local high school
ii) Survey a sample of grade 12 students from all the local high schools
iii) Survey all grade 12 students from the local high schools
iv) Survey all grade 12 students from one local high school

a. iii b. i c. ii d. iv

A 26. A baker wants to check the quality of the muffins he bakes each day. Which of the following data collection methods would provide the most accurate information?

i) Test one muffin from each batch
ii) Test all the muffins in the first batch
iii) Test all the muffins in a random batch
iv) Test all the muffins in the last batch

a. i b. iv c. ii d. iii

C 27. A fashion designer offered to teach a class on clothing design for students in grades 11 and 12. Which data collection method would provide the most accurate information about how likely students w be to take the class?

i) Survey a sample of grade 11 and 12 students
ii) Survey a sample of grade 11 and 12 girls
iii) Survey all grade 12 students
iv) Survey all grade 11 and 12 girls

a. ii b. iv c. i d. iii

A 28. To determine the favourite TV shows of grade 9 students at a school, which of the following data collect methods would provide the most accurate information?

i) Survey a sample of students in one grade 9 class

a. iv b. ii c. i d. iii

D 29. For a science project, groups of grade 9 students each analysed a sample of water from a local stream.
Group P collected samples every Monday morning before school.
Group Q collected samples at different times every Tuesday.
Group R collected samples before school on different days.
Group S collected samples at different times on different days
Which group will produce the most reliable information?
a. Group Q b. Group R c. Group P d. Group S

D 30. A company makes granola bars in batches of 1200. The quality control inspector tests 5 randomly selected bars from each batch. Which sampling method does the inspector use?
a. Convenience sampling c. Cluster sampling
b. Simple random sampling d. Stratified random sampling

D 31. A town council wants to know the public's opinion about increasing taxes to pay for more housing for the homeless. They hire people to conduct door-to-door interviews in randomly selected areas of town. Which sampling method did the town council use?
a. Self-selected sampling c. Systematic sampling
b. Simple random sampling d. Cluster sampling

B 32. A specialty craft store wants to know if customers are satisfied with the product selection.
To find out, they interview every 20th person leaving the store for 1 week.
Which sampling method does the store use?
a. Simple random sampling c. Cluster sampling
b. Systematic sampling d. Self-selected sampling

A 33. A mobile phone company wants to know if its customers would be willing to pay a higher monthly fee for a plan that would cover international calls to Europe. To gather data, they make a list of cell phone numbers that regularly make calls to Europe and use a computer program to randomly select numbers from this list to call and survey. Which sampling method did the company use?
a. Simple random sampling c. Self-selected sampling
b. Systematic sampling d. Convenience sampling

C 34. A school's cafeteria manager wants to know whether changing the cafeteria menu will increase its the number of lunch specials it sells. On Wednesday, the manager surveys as many people in the cafeteria as he can to find out. Which sampling method did he use?
a. Simple random sampling c. Convenience sampling
b. Cluster sampling d. Systematic sampling

A 35. A local political party wants to know what people think about a new by-law banning certain types of dogs. It sends out a newsletter to everyone in the district. The newsletter contains a questionnaire and readers are asked to return their responses by mail or email. Which sampling method was used?
a. Self-selected sampling c. Simple random sampling
b. Systematic Sampling d. Cluster sampling

a. Simple random sampling
b. Cluster sampling
d. Systematic sampling

A 35. A local political party wants to know what people think about a new by-law banning certain types of dogs. It sends out a newsletter to everyone in the district. The newsletter contains a questionnaire and readers are asked to return their responses by mail or email. Which sampling method was used?
a. Self-selected sampling
b. Systematic Sampling
c. Simple random sampling
d. Cluster sampling

A 36. A travel company specializes in arranging two-week holidays to the resorts of Beachland, Seaview, and Hillside. The owner of the company wanted to gauge customer satisfaction with the service. He made a list o customers who had visited one of the resorts over the last year and called every 10th customer on the list. Which sampling method did the owner use?
a. Systematic sampling
b. Convenience sampling
c. Cluster sampling
d. Stratified random sampling

B 37. A company hires students to fill boxes with cartons of fruit juice. The quality control manager wants to ensur each box contains the same number of each type of juice. For each student, the manager randomly selects and checks a box that the student filled.
a. Cluster sampling
b. Stratified random sampling
c. Systematic sampling
d. Convenience sampling

D 38. The administrator of a dance and fitness studio wants to know if there is interest in having more evening classes available. He surveys everyone who participates in yoga classes to see what they think. Which sampling method does he use?
a. Self-selected sampling
b. Stratified random sampling
c. Simple random sampling
d. Cluster sampling

D 39. The owner of a large business wants to know if the employees would be interested in having a free fitness centre available for their use. She sends a memo to all employees, asking them to send their input to her assistant. Which sampling methods did she use?
a. Cluster sampling
b. Simple random sampling
c. Systematic sampling
d. Self-selected sampling