

20013E.C Mathematics Final Model Examination for grade 8

I choose the correct answer from the given alternatives.

Time allowed 1 Hour

- _____ 1. Which one of the following is true?
 A. $Z^+ \subseteq Q^+$ B. $W \subseteq Z^-$ C. $Q \subseteq Z$ D. $Q^- \subseteq Q^+$
- _____ 2. Which one of the following is true?
 A. $|x| = x$ if $x < 0$ B. $|x| = -x$ if $x > 0$
 C. $|x| = x$ if $x > 0$ D. $|x| = 0$ if $x \neq 0$
- _____ 3. If $|8 - 12x| = 3\frac{2}{5}$, then its solution set is
 A. $\{\frac{-19}{20}, \frac{23}{60}\}$ B. $\{\frac{-23}{60}, \frac{-19}{20}\}$ C. $\{\frac{-23}{60}, \frac{19}{20}\}$ D. $\{\frac{19}{20}, \frac{23}{60}\}$
- _____ 4. Which one of the following is true?
 A. $|\frac{-10}{7}| = |\frac{-2}{7}|$ B. $-3\frac{1}{2} < |-2.5|$
 C. $|\frac{-7}{3}| < \frac{4}{3}$ D. $|\frac{2}{3}| > |\frac{-3}{4}|$
- _____ 5. $[4\frac{3}{4} + (-1\frac{1}{2})] \div [-6\frac{1}{8} + (-5\frac{3}{8})]$ is equal to
 A. $\frac{13}{46}$ B. $\frac{-13}{46}$ C. $\frac{-13}{92}$ D. $\frac{-299}{8}$
- _____ 6. $90 \times (-8) + 100 \div (-50)$ is equal to
 A. -722 B. $\frac{62}{5}$ C. -360 D. $\frac{-62}{5}$
- _____ 7. The sum of two consecutive integers is - 67. What is the larger number?
 A. -34 B. -33 C. -30 D. -32
- _____ 8. The solution set of $3(x+2) - (2x-7) = (5x-1) - 2(x+6)$, $x \in \mathbb{N}$ is
 A. {27} B. {2} C. {29} D. {13}
- _____ 9. If $2A : 3B = 5:6$ and $3B : 2C = 36:15$, then $A:C$ is equal to
 A. 2:1 B. 2:3 C. 1:2 D. 3:2
- _____ 10. If 25% of Ali's salary is Birr 135.75, What is the amount of his full salary?
 A. 13,575 B. 5430 C. 543 D. 54,300
- _____ 11. In a group of tourists 34 are from U.S.A, 44 are from Japan, 64 are from Germany and 18 are from South Africa. What percentage of the group are from Japan?
 A. 20% B. 27.5% C. 30% D. 37%
- _____ 12. A company earned a profit of birr 880,000 last year and birr 970,000 this year. What is the percent change in a profit between the two years?
 A. 10.22% B. 20% C. 90% D. 50%
- _____ 13. A dealer gained a 10% profit by selling an article for birr 330.00. What was the original price of the article?
 A. 339 birr B. 329.7 birr C. 293 birr D. 300 birr
- _____ 14. If $\triangle DEF \sim \triangle KLM$ such that $DE = (2x+2)$ cm $DF = (5x-7)$ cm, $KL = 2$ cm, $KM = 3$ cm and $EF = 10$ cm then the length of LM is equal to
 A. 60cm B. $\frac{5}{3}$ cm C. 12cm D. 10 cm
- _____ 15. The ratio of the age of a boy to the age of his father is 2:5. If the sum of their ages is 70 years, how old is the father?
 A. 56 years B. 50 years C. 42 years D. 40 years
- _____ 16. A pair of fair dice is tossed. What is the probability of not getting a sum 9?
 A. $\frac{2}{9}$ B. $\frac{7}{9}$ C. $\frac{1}{9}$ D. $\frac{8}{9}$
- _____ 17. Which of the following is true about a probability scale?
 A. probability of unlikely between 0 and $\frac{1}{2}$ B. probability of even chance is $\frac{1}{2}$
 C. probability of likely between $\frac{1}{2}$ and 1 D. all are true

- _____18. Which of the following set of numbers could Not be the length of sides of a right angled triangle?
 A. 0.75,1,1.25 B. $1, \frac{3}{2}, 2$ C. 6,8,10 D. 5,12,13
- _____19. Three men can finish certain work in 16 days. In how many days can eight men finish some work?
 A. 8 B. 6 C.76 D. 18
- _____20. If $y \propto \frac{1}{x^2}$ and $y= 54$ when $x=\frac{2}{3}$ What is the value of y when $x=\frac{1}{6}$?
 A. $\frac{2}{3}$ B. $\frac{3}{2}$ C.864 D. 14

- _____21. The slope of a line passing through the point (2,k) and (k,-2) is $\frac{1}{2}$ What is the value of k?
 A. $\frac{2}{3}$ B. $-\frac{2}{3}$ C. $-\frac{1}{2}$ D. $\frac{1}{2}$

- _____22. Which one of the following is **Not** true about the line passing through the points (6,-5) and (8,-5)?
 A. Its slope is zero B. **it is parallel to the y – axis**
 C. it is perpendicular to the y- axis D. it is horizontal line

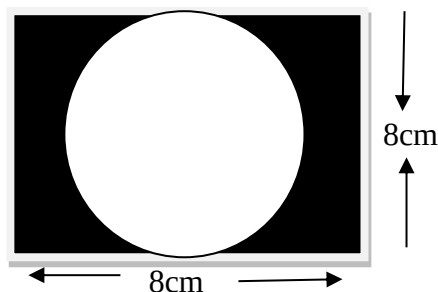
Consider the following frequency table which displays the monthly salary in birr of employees of a factory. For questions No 23 to 25 refer the table below.

Salary	1200	1350	1560	1720	1960
No employees	18	22	34	20	6

- _____23. How many employees earn less than 1350 birr a month?
 A. **18** B. **20** C.**22** D. **40**
- _____24. What is the modal monthly payment of the factory?
 A. **1960 birr** B. **1200 birr** C.**1350 birr** D. **1560 birr**
- _____25. How many employees earn more than 1720 birr a month?
 A. **26** B. **6** C.**16** D. **12**
- _____26. The median of the data: -3,5,4, -1,5,2,1,3 is
 A. **2** B. **2.5** C.**4.5** D. **1**
- _____27. Which one of the following is **Not** true?
 A. **A rectangle has all properties of a parallelogram**
 B. **The diagonals of a rectangle are equal**
 C.**consecutive angles of a parallelogram are complementary**
 D. **The diagonals of a rhombus are perpendicularly bisect each other**
- _____28. The sum of the interior and exterior angles of a polygon is 1260° . What is the number of sides?
 A. **9** B. **7** C.**63** D. **18**
- _____29. What is the slope of the line passing through the points P (1, -2) and Q (2,3)?
 A -5 B. 5 C $\frac{1}{5}$ D. $-\frac{1}{5}$

- _____30. PQRS is a parallelogram of area 18cm^2 . What are the lengths of the corresponding attitudes?
 if PQ= 6cm and QR= 2cm?
 A.9cm and 3 cm B.12 cm and 36 cm C.16cm and 14 cm D. 15 cm and 30 cm

- _____31. What is the area of the shaded region in the figure below?
 A. $16(4-4\pi) \text{ cm}^2$
 B. $16(4-\pi) \text{ cm}^2$
 C. $8(8-16\pi) \text{ cm}^2$
 D. $(64-16\pi) \text{ cm}^2$



- _____32. What is the circumference of a circle if its area is $\frac{1}{8} \pi \text{ cm}^2$?
 A. **$4.5\pi \text{ cm}$** B. $\frac{\pi}{9} \text{ cm}$ C. $\frac{\sqrt{2}\pi}{2} \text{ cm}$ D. $\frac{\sqrt{2}\pi}{4} \text{ cm}$
- _____33. What is the total surface area of a right triangular prism whose altitude is 15cm long and whose base is a right angled triangular with lengths of sides 6cm,8cm and 10cm?
 A.420 cm^2 B. 440 cm^2 C.408 cm^2 D. 384 cm^2

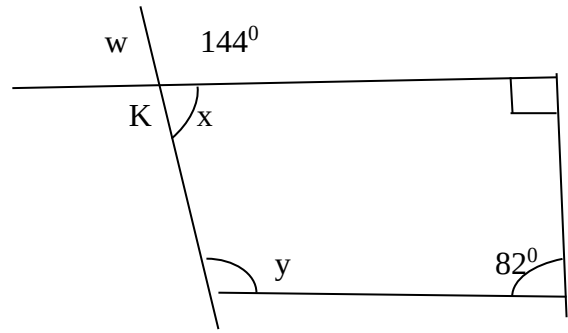
_____34. In figure below which one of the following is false?

A. $x = 36^\circ$

B. $y = 152^\circ$

C. $w = 2x$

D. $k = 144^\circ$



_____35. If the sum of the three angles of a quadrilateral is equal to $1\frac{1}{2}$ times, the sum of the three angles of a triangle, what is the measure of the fourth angle of the quadrilateral?

A. 60°

B. 30°

C. 45°

D. 90°

_____36. Which of the following statements is **Not** true?

A. The diagonal of a rectangle is no longer than any of its sides.

B. If a parallelogram has equal diagonals, then it is a square

C. The diagonals of a rhombus divided the rhombus in to four right angled triangles of equal area.

D. Diagonals of parallelogram bisect each other

_____37. The solution set of the equation $\frac{x-9}{4} - \frac{x-12}{5} = 6$ is

A. {213}

B. {- 213}

C. {117}

D. {123}

_____38. which one of the following numbers is NOT a perfect cube?

A. $\frac{8}{125}$

B. $\frac{27}{64}$

C. -8

D. $\frac{36}{49}$

_____39. A woman is 25 years older than her daughter. 5 years ago she was six times as old as her daughter. How old is the daughter now?

A. 5 years

B. 10 years

C. 12 years

D. 8 years

_____40. Which one the following is the highest common factor (HCF) of the terms $6x^2y^3$, $9x^3y^2$, and $18xy^4$?

A. $3xy^2$

B. $3x^2y$

C. $6xy^2$

D. $6x^2y^2$