PRIMARY MATHS SERIES

REVISION GUIDE FOR STANDARDS 7 AND 8

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TIME, SPEED AND TEMPERATURE

5.1 Specific Objectives

By the end of this unit, the learner should be able to:

a) Work out problems involving time, speed, distance and average speed.

b) Work out problems involving temperature in degree Celsius.

5.2 Worked Exercise

1. An aero plane took 4 ½ hours to fly from Cairo to Zambia. If it landed in Nairobi at Nairobi at 0215 h on Saturday, when did it take off from Cairo?

A. Friday 2145 h B.Saturday 2245h C Friday 2245h D .Saturday 2145 h

Working

The time the aero plane took from midnight to 0215h of Saturday = 2h 15m.

The difference (4h 30min – 2h 15min) is the time the aero plane took on Friday night.

Time on Friday night

	h	min
	4	30
-	2	15
	2	15

= 2h 15min before midnight

Time of take off from Cairo

	h	min	
	24	00	
-	2	15	
	21	45	on Friday

The correct answer is A (Friday 2145 h)

2. A train let Mombasa on Monday at 2125 h and took sixteen and half hours to reach Kisauni. When did the train reach Kisumu?

A. Tuesday 1.55 a.m B. Tuesday 1.55 p.m C. Wednesday 1.55 p.m D. Monday 1:55 a.m

Working

Monday: from 2125h to midnight = 2400h - 2125h

= 2h 35min

Tuesday: Number of hours traveled from midnight

= 16h 30min - 2h 35 min

= 13h 55min

The train arrived at Kisumu on Tuesday at 1355h

This is the same as 1.55p.m

The correct answer is B (Tuesday 1.55pm)

3. A meeting started at quarter to noon. If the meeting lasted for 2 h 35min, what time in 24-h clock system did the meeting end?

A. 1320h B. 1420h C. 1310h D. 1410h

Working

The meeting started at 11.45

Add the meeting time

=	h	min
	11	45
	+ 2	35
	14	20

The meeting ended at 1420h

The correct answer is B (1420 h)

4. A wall clock gains 3 seconds every one hour. The clock was set correct at 1pm on Tuesday. What time was it showing at 1pm on Friday on the following week?

Working

The number of days from Tuesday 1 pm to Friday 1pm the following week = 10days.

Number of hours = (24 x 10) = 240 hrs.

The clock gains 3 seconds after every hour in ten days.

240 x 3 = 720 seconds

Min = $\frac{720}{60}$

= 12 min

Hence it will show 1 p.m. + 12 min

= 1.12 pm

In 24 h clock system

= 1312h

The correct answer is B (1312h)

5. A cyclist traveled from Nairobi to Nyeri for 4h 30min at a speed of 80km/h. He drove back to Nairobi taking 4 hours. What is his speed, in km/h?

A .90 B. 72 C. 80 D. 100

Working

Distance = speed x time

= 80 x 4 ½

= 360 km

From Nyeri - Nairobi distance = 360km

Time taken = 4hrs

Therefore speed = $\frac{\text{Distance}}{\text{Time}}$

$$= \frac{360}{4}$$

$$= 90\text{km/h}$$

The correct answer is A (90km/hr)

6. A motorist crosses a bridge at a speed of 25m/s. What is his speed in km/hr?

A. 80 B. 90 C. 60 D 30

Working

When working out this kind of question we use a relationship,

If 10 m/s = 36 km/h

25m/s = ?

$$= (\frac{25}{10} \times 36)\text{ km/h}$$

$$= 90\text{ km/h}$$

The correct answer is B (90km/h)

7. The distance between Mombasa and Mtito andei is 290km. A bus left Mombasa at 1035h and traveled to Mtito andei at a speed of 50km/h. At what time did it arrive at Mtito andei?

A. 1623h B.1523h C.1423h D.1723h

Working

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$= \frac{290}{50}$$

$$= 5\frac{4}{5}\text{ hours or } 5\text{h } 48\text{min}$$

Arrival time = Departure time = Time taken + Time taken

	h	min
=	10	35
	+5	48
	16	23

The arrival time 1623 h

The correct answer is A (1623h)

8. Kamau drove from town M to town N a distance of 150 km. He started at 9.30 am and arrived at town N at 11.00 am. He stayed in town for one hour and 50 minutes. He drove back reaching town M at 2.30pm. Calculate Kamau's average speed for the whole journey.

A. 90km/h B. 100km/h C. 60km/h D. 150 km/h

Working

Total distance from M to N and back

= 150 x 2

= 300 km

Total time taken

From 9.30 - 11.00 = 1 h 30 min

Time spent in town

= 1 h 50 min

Time taken from N to M

= 1430 – 1250

Total time = 5 hours

Average speed = $\frac{\text{Total distance}}{\text{Total time taken}}$

= $\frac{300}{5}$

= (60km/h)

The correct answer is C (60km/h)

9. The temperature of an object was 20º C below the freezing point. It was warmed until there was a rise of 40º in temperature. What is the reading in the thermometer?

A. 60 Cº B. 40Cº C. 20Cº D. 20Cº

Working

Below freezing point means ; - 20

Rose by 40º

Therefore - 20º + 40 = 20 C

The correct answer is C (20º C)

5.3 Practice Test Paper 5

1. An aero plane took 3h 15min to travel from Cape Town to Addis Ababa. If it reached Addis Ababa at 0200h on Monday, at what time and day did it leave Cape Town?

A. 2245h Sunday B. 2245h Monday C. 1045h on Sunday D. 1045h on Monday

2. A one and half hour meeting started 25 minutes late and ended at 1615h. At what time in a.m/p.m was the meeting supposed to commence?

A 2.20 p.m B. 2.45 p.m C. 3.10 p.m D. 3.50 p.m

3. Two drivers, Otinga and Elomi, drove from Nairobi to Kakamega, a distance of 480km.They started at 7.00 a.m. Otinga drove at a constant speed and reached Kakamega at 1p.m. Elomi drove at an average speed of 60km/h. How far from Kakamega was Elomi when otinga arrived?

A. 120 km B. 160 km C. 360 km D. 420km

4. A meeting took 2 ¾ hours before a 55 minutes break. It then continued for another 2 ¼ hours and ended at 4.15pm. At what time in 24h system did it start?

A.1020h B. 1100h C. 1115 h D. 1305h

5. A watch was set right at 11.48 am on Monday. What time will it show the following Monday the same time if it gains 5 seconds every hour?

A. 12.02pm B. 11.55 pm C. 12.02am D. 11.55 am

6. Mwangaza takes 2 h 12 min to drive from home to work at an average speed 28 $\frac{4}{5}$ km/h. He drives back at a speed of 63 $\frac{9}{25}$ km/h. How much time does he take to drive from home to work and back?

A. 1h 28 min B. 4h 24 min C. 3h 12 min D. 2h 56min

7. A train left Konza at 2035h on Monday and took 7 h 40 min to reach Nakuru. At what time did it reach Nakuru?

A Monday 4.15 a.m B Tuesday 4.15a.m C. Monday 4.15 p.m D. Tuesday 4.15 p.m

8. Ahmed traveled by bus from noon to 3pm for 180 km. He then traveled for an hour in a car whose average speed was 20km/h more than the bus. What was his average speed, in km/h, for the whole journey?

A. 80 B. 70 C. 65 D. 50

9. A transline bus left Nairobi for Kisii town at 10am, a distance of 225km. It travelled at an average speed of 90km/h.At what time did it reach Kisii Town?

A 12.30 p.m B. 12.50p.m C. 2.30p.m D 12.30 a.m

10. A Kenya airways aircraft left Nairobi at 2350h on Wednesday and took 1 $\frac{3}{4}$ hrs to reach Mombasa where it stopped for 50 minutes .It then left Mombasa for Eritrea taking 40 minutes . At what time in am/pm and day did it arrive at Eritrea?

A. Wednesday 2.15 a.m B. Thursday 3.05 a.m C. Wednesday 2.15 a.m
D. Thursday 2.15 a.m

11. An inter house school competition started at 3.15 pm after 45 minutes, players. Went or a 15 minutes break. The games then took 55 minutes, to end. At what time in 24 hour system did the game end?

A. 1710 h B. 0510 h C 1655 h D 1630 h

12. A baby woke up at 5.30 a.m after sleeping for 7 h 45 min. At what time in a.m/p.m did the baby sleep?

A 9.45 a.m B 1.15 a.m C 9.45p.m D 2.15p.m

13. Musa left Nairobi on Tuesday at 6.30 pm and took 8 hours 45 minutes to reach his home. On what day and at what time in a 24 hour system did he reach his home?

A. Wednesday 0315 h B. Wednesday 1515 h C. Tuesday 1515h D. Tuesday 0315 h

14. A motor van traveled 216 km at an average speed of 48km/h. On the return journey the average speed increased to 72 km/ h. Calculate the average speed, in km/h, for the whole journey.

A. 57.6 B. 60 C. 28.8 D.68.6

15. How many days are there between15th July and 15th September?

A. 60 B. 61 C. 62 D. 63

16. A cyclist took 15 minutes to travel from his home to a nearby town at a speed of 18km/h. He took 24 minutes to travel back from town to his home. What was his speed, in km/h, from town to his home?

A. 1 4/5 B. 4 ½ C. 11 ¼ D. 148/13

17. Adhiambo left Kiserian and drove for 1 hr 30min at an average speed of 8km/h. She rested for half an hour and continued with the journey for 2 hours at an average speed of 7.5 km/h. What was the average speed for the whole journey?

A. 27km/h B. 7 5/7 km/h C. 7 ¾ km/h D. 6 ¾ km/h

18. Juma slept at 2130h. He woke up 8h 45 min later. At what time, in am/pm, did he wake up?

A. 6.15 p.m B. 12.15p.m C. 12.15a.m D. 6.15p.m

19. Jane left home for work at 11.45am and took 1 h 20min. After staying at work for one hour, she traveled back home. The time taken to travel to work was twice that taken for the return journey. At what time did she reach home?

A. 3.25pm B. 2.45pm C. 4.45pm D. 1.45pm

20. Ntonyiri left Q town at 8.15am for town R, travelling at a speed of 90km/h, M'mukindai left town R at 9.00 for town Q traveling at a speed of 120km/h. The two met at a place 180km away from Q. What was the distance between town Q and R?

A. 330km B.150 km C. 300 km D. 276 km

21. A motorist driving at 60km/h was expected in a town, 200km away. After an hour, the car got a puncture which took him 20 minutes to repair. At what speed, in km/h, did he drive after repairing the puncture if he had to arrive at the expected time?

A. 105 B. 100 C. 70 D. 521/2

22. Kamenju sod milk from 7th January to 7th March 2006. For how many days did he sell the milk?

A. 58 B. 59 C. 60 D. 61

23. A driver traveling at an average speed of 84km/h took 21/2 hours to to travel from A back to town A. What was the average speed for the whole journey?

A. 36km/h B. 72km/h C. 731/2 km/h D. 63km/h

24. A cyclist started a 250 journey at 6.30 am, traveling at a speed of 100km/h. After covering the first 150km, the car got a puncture which took him half an hour to repair. He then continued with the rest of the journey at an average speed of 80km/h. At what time did he reach his destination?

A 9.15 am B 9.45 am C. 9.30 am D. 9.55am

25. A bus left Kisumu for Nakuru at 1900h. It arrived in Nakuru 9 hours later. At what time did it arrive in Nakuru?

A. 3.00 pm B 3.00 p.m C. 4.00 p.m D. 4.00 a.m

26. Oraro slept at 2315h on Saturday and woke up six hours later. On what day and time did he wake up?

A. Saturday 5.15 a.m B. Sunday 5.15 p.m C. Sunday 5.15 a.m D. Saturday 5.15 pm

27. A motorist covers 43km in every 1 ¾ minutes. How many kilometers will he have covered from 8.19am to 9.08?

A. 28 B. 84 C. 147 D. 25 7/4

28. In the year 2012, 16th February was on Wednesday. What day was 1st May the same year?

A Saturday B. Sunday C. Monday D. Tuesday

29. Water gained heat at the rate of 12c per minutes for 5 minutes. It was then allowed to loose heat at 4 c per minute. If the temperature before heating was 22º C, what was the temperature before heating was 22 ºC

A. 68 ºC B. 60º C C. 48º C D. 46º C

30. A car left town A at 8.15 am for town B, a distance of 330km. He covered the first 112 km in 1 hr 20min and stopped for 20 minutes to fuel. He continued with the journey arriving in town with the journey arriving in town B at 11.55 am. What was the average speed for the whole journey?

A. 109 km/h B. 99km/h C. 90km/hr D. 84 km/h

31 A car takes 54 minutes to travel from town P to town Q at an average speed of 80km/h. Another one took 40 minutes to travel the same distance. What was the difference of their speeds in km/h?

A. 8 B. 28 C. 36 D 108

5.4 Practice Test paper 5 Answers

1		7		13		19		25		31	
2		8		14		20		26			
3		9		15		21		27			
4		10		16		22		28			
5		11		17		23		29			
6		12		18		24		30			