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Math Baseline Test

Grade 8 and 9

1. Name of the Mindspark center:
2. Center ID:
3. Name of the student:
4. Student ID:

MBLG891: YL. Content: Algebra; Topic: Whole numbers; Domain: Knowing facts and procedures; Key: B.

1. Write the correct answer in the space:

$$48 \times 5 = \square$$

A. 200
B. 240
C. 420
D. 500

MBLG892: YL. Content: Algebra; Topic: Whole numbers; Domain: Knowing facts and procedures; Key: C.

2. Write the correct answer in the space:

$$52 - 7 = \square$$

A. 59
B. 25
C. 45
D. 364

MBLG893: YL. Content: Algebra; Topic: Whole numbers; Domain: Knowing facts and procedures; Key: A.

3. Write the correct answer in the space:

$$243 + 176 = \square$$

A. 419
B. 67
C. 70
D. 914

MBLG894: YL. Content: Algebra; Topic: Whole numbers; Domain: Knowing facts and procedures; Key: A.

4. Write the correct answer in the space:

$$27 \div 3 = \square$$

A. 9
B. 3
C. 24
D. 30

MBLG895: YL. Content: Algebra; Topic: Whole numbers; Domain: Knowing facts and procedures; Key: B.

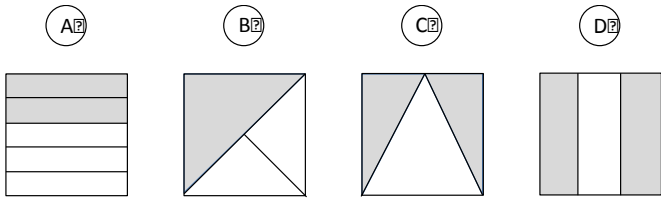
5. Write the correct answer in the space:

$$49 \quad - \quad 28 \quad = \quad \square$$

A. 77
B. 21
C. 12
D. 39

MBLG896: TIMSS 2003. Content: Number; Topic: Fractions and decimals; Domain: Using concepts; Key: D.

6. Which shows $\frac{2}{3}$ of the square shaded?



MBLG897: TIMSS 2007. Content: Number; Topic: Equations and formulas; Domain: Reasoning; Key: C.

7. The temperature at 7 a.m. one morning was 12°C. It increased by 2°C every hour until it reached 20°C at 11 a.m. What was the temperature at 9 a.m.?

A. 14°C
B. 15°C
C. 16°C
D. 17°C

MBLG898: TIMSS 2003. Content: Data; Topic: Data interpretation; Domain: Solving routine problems; Key: B.

8. This chart shows temperature readings made at different times on four days.

Temperatures					
	6 a.m.	9 a.m.	Noon	3 p.m.	8 p.m.
Monday	15°	17°	20°	21°	19°
Tuesday	15°	15°	15°	15°	9°
Wednesday	8°	10°	14°	14°	15°
Thursday	8°	11°	14°	14°	20°

When was the highest temperature recorded?

A. noon on Monday
B. 3 p.m. on Monday
C. noon on Tuesday
D. 3 p.m. on Wednesday

MBLG899: QES. Content: Algebra; Topic: Patterns; Domain: Reasoning; Key: C.

9. See the pattern of numbers in the number chart below:

	Column 1	Column 2	Column 3	Column 4	Column 5
Row 1	4	8	12	16	20
Row 2	24	28	32	36	40
Row 3	44	48	52	56	60
Row 4	64	68	72	76	80
Row 5					

Which of these is the correct way of finding the number that will appear just below 64 in column 1?

A. adding 1 to 64
B. adding 4 to 64
C. adding 20 to 64
D. adding 44 to 64

MBLG8910: YL. Content: Number; Topic: Fractions and decimals; Domain: Knowing facts and procedures; Key: A.

10. $18.23 - 0.2 =$

A. 18.03
B. 18.21
C. 16.23
D. 18.30

MBLG8911: SLS. Content: Number; Topic: Fractions and decimals; Domain: Knowing facts and procedures; Key: D.

11. Write the answer.

$$2\frac{1}{2} + 1\frac{1}{2} \quad = \square$$

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

MBLG8912: QES. Content: Number; Topic: Fractions and decimals; Domain: Knowing facts and procedures; Key: C.

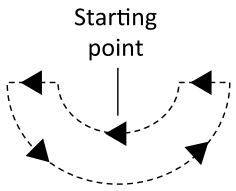
12. Arrange these fractions in ascending order (from smallest to largest).

$$\frac{3}{8}, \frac{5}{16}, \frac{5}{8}$$

A. $\frac{3}{8}, \frac{5}{8}, \frac{5}{16}$
B. $\frac{5}{16}, \frac{5}{8}, \frac{3}{8}$
C. $\frac{5}{16}, \frac{3}{8}, \frac{5}{8}$
D. $\frac{3}{8}, \frac{5}{16}, \frac{5}{8}$

MBLG8913: QES. Content: Geometry; Topic: Two- and three-dimensional shapes; Domain: Knowing facts and procedures; Key: B.

13. An ant starts at a point on this shape, walks along the boundary and comes back to the starting point. It does not turn back at any time.



Which of the following is the same as the distance walked by the ant?

A. the length of the ant
B. the perimeter of the shape
C. the area enclosed by the shape
D. the length of the horizontal lines in the shape

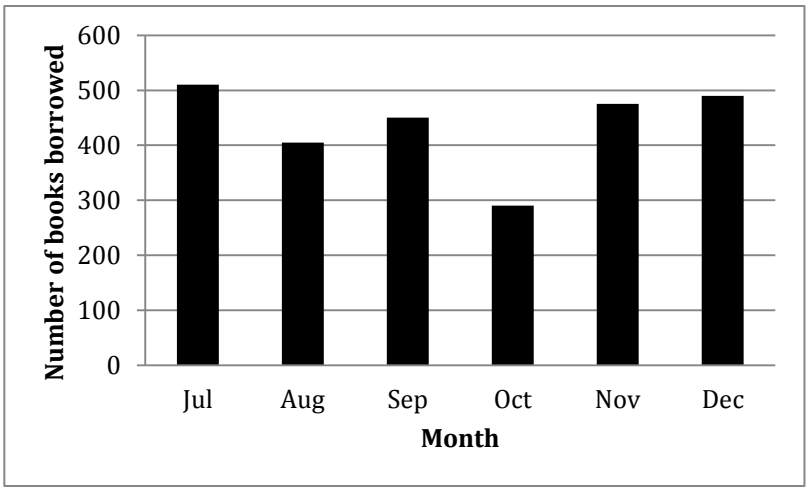
MBLG8914: QES. Content: Data; Topic: Data interpretation; Domain: Using concepts; Key: D.

14. Ruchika and Sharanya are answering a paper containing 100 very simple questions. For each 5 correct answers, one gets a chocolate. As per the rule and the results, Ruchika got 15 chocolates and Sharanya got 10 chocolates. Which of the following is true?

    A. Ruchika got 5 more questions right than Sharanya
    B. Ruchika got 10 more questions right than Sharanya
    C. Ruchika got 25 more questions right than Sharanya
    D. Ruchika got 1 more question right than Sharanya

MBLG8915: QES. Content: Data; Topic: Data interpretation; Domain: Solving routine problems; Key: D.

15. The graph below shows the number of books borrowed from a children's library from July 1 to December 31. Which of the following CAN be found out from this graph?



    A. the number of books borrowed between 15th and 30th November
    B. why such few books were borrowed in October
    C. the number of children who visited the library in August
    D. the month(s) in which more than 500 books were borrowed

MBLG8916: PISA 2012. Content: Number; Topic: Fractions and decimals; Domain: Solving routine problems; Key: C.

16. Normally, a penguin couple produces two eggs every year. Usually the chick from the larger of the two eggs is the only one that survives. With rockhopper penguins, the first egg weighs approximately 78 g and the second egg weighs approximately 110 g. By approximately what percent is the second egg heavier than the first egg?

    A. 29%
    B. 32%
    C. 41%
    D. 71%

MBLG8917: PISA 2012. Content: Data; Topic: Data interpretation; Domain: Solving routine problems; Key: C.

17. The table below shows data about household ownership of televisions (TVs) for five countries. It also shows the percentage of those households that own TVs and also subscribe to cable TV.

Country	Number of households that **own TVs**	Percentage of households that **own TVs** compared to **all households**	Percentage of households that **subscribe to cable television** compared to households that **own TVs**
Japan	4.8 crores	99.8%	51.4%
France	2.45 crores	97.0%	15.4%
Belgium	44 lakhs	99.0%	91.7%
Switzerland	28 lakhs	85.8%	98.0%
Norway	20 lakhs	97.2%	42.7%

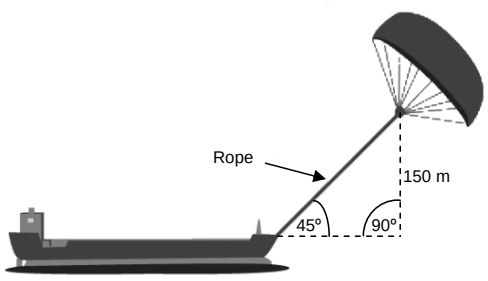
Source: ITU, World Telecommunication Indicators 2004/2005
ITU, World Telecommunication/ICT Development Report 2006

The table shows that in Switzerland 85.8% of all households own TVs. Based on the information in the table, what is the closest estimate of the total number of households in Switzerland?

A. 24 lakhs
B. 29 lakhs
C. 33 lakhs
D. 38 lakhs

MBLG8918: PISA 2012. Content: Geometry; Topic: Two- and three-dimensional shapes; Domain: Solving routine problems; Key: B.

18. Approximately what is the length of the rope for the kite sail, in order to pull the ship at an angle of 45° and be at a vertical height of 150 m, as shown in the diagram?



A. 173 m
B. 212 m
C. 285 m
D. 300 m

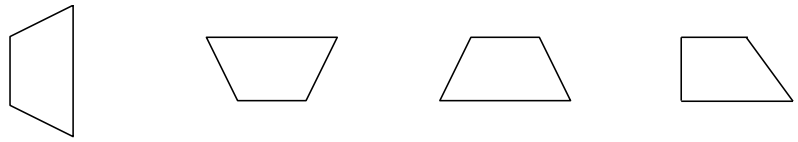
MBLG8919: QES. Content: Number; Topic: Fractions and decimals; Domain: Using concepts; Key: C.

19. What is 25% of $\frac{1}{8}$?

A. $\frac{1}{2}$
B. $\frac{1}{32}$
C. $\frac{25}{8}$
D. $\frac{1}{200}$

MBLG8920: QES. Content: Geometry; Topic: Two- and three-dimensional shapes; Domain: Knowing facts and procedures; Key: C.

20. Which of these shapes is/are a trapezium(s)?



A. shape 3 only
B. shape 1 and 3 only
C. shapes 1, 2 and 3 only
D. shapes 1, 2, 3, and 4

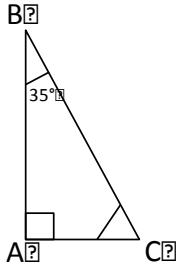
MBLG8921: QES. Content: Algebra; Topic: Equations and formulas; Domain: Reasoning; Key: D.

21. For any numbers *x* and *y* such that *x = 70 + y*, what can be said about *x* and *y*?

A. $x = y$
B. $x < y$
C. $x > y$
D. none of the above because the exact values of *x* and *y* are NOT known

MBLG8922: QES. Content: Geometry; Topic: Two- and three-dimensional shapes; Domain: Knowing facts and procedures; Key: B.

22. What is the measure of angle C in the triangle below?



A. 45°
B. 55°
C. 65°
D. 145°

MBLG8923: TIMSS 2011. Content: Algebra; Topic: Equations and formulas; Domain: Knowing facts and procedures; Key: A.

23. There were *m* boys and *n* girls in a parade. Each person carried 2 balloons. Which of these expressions represents the total number of balloons that were carried in the parade?

A. $2(m + n)$
B. $2 + (m + n)$
C. $2m + n$
D. $m + 2n$

MBLG8924: TIMSS 2011. Content: Data; Topic: Data interpretation; Domain: Knowing facts and procedures; Key: B.

24. Iman and Siddartha were candidates for school president. Here are the election results:

Iman	80%
Siddartha	20%

How likely would it be for a student asked at random to have voted for Iman?

A. it is certain that the student voted for Iman
B. it is likely that the student voted for Iman
C. it is unlikely that the student voted for Iman
D. it is certain that the student did not vote for Iman

MBLG8925: TIMSS 2011. Content: Geometry; Topic: Tools, techniques, and formulas; Domain: Reasoning; Key: A.

25. The perimeter of a square is 36 cm. What is the area of the square?

A. 81 cm^2
B. 36 cm^2
C. 24 cm^2
D. 18 cm^2

MBLG8926: SLS. Content: Geometry; Topic: Tools, techniques, and formulas; Domain: Reasoning; Key: B.

26. ■ + ◆ - ❖ = 12

Which of the following values of ■, ◆, and ❖ would make the above true?

A. ■ = 6, ◆ = 6, ❖ = 6
B. ■ = 7, ◆ = 6, ❖ = 1
C. ■ = 11, ◆ = 0, ❖ = 1
D. ■ = 10, ◆ = 11, ❖ = 12

MBLG8927: SLS. Content: Measurement; Topic: Attributes and units; Domain: Using concepts; Key: C.

27. The number of 750ml bottles that can be filled from 600L of water is:

A. 8
B. 80
C. 800
D. 8000

MBLG8928: SLS. Content: Number; Topic: Fractions and decimals; Domain: Using concepts; Key: A.

28. $(-6 \times -5) -6 + 5 =$

A. 29
B. 71
C. -30
D. 36

MBLG8929: SLS. Content: Number; Topic: Fractions and decimals; Domain: Using concepts; Key: A.

29. Which of the following is equal to 2^5?

A. $2^2 \times 2^3$
B. $2^2 + 2^3$
C. $2^{10} - 2^5$
D. $2^{20} \div 2^4$

MBLG8930: TIMSS 2007. Content: Number; Topic: Whole numbers; Domain: Knowing facts and procedures; Key: C.

30. Which of the following is equal to 3.4×10^2?

A. 3.4
B. 34
C. 340
D. 3400

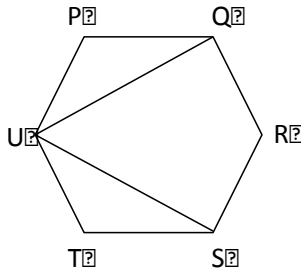
MBLG8931: TIMSS 2007. Content: Number; Topic: Whole numbers; Domain: Using concepts; Key: B.

31. There are 30 students in a class. The ratio of boys to girls in the class is 2:3. How many boys are there in the class?

A. 6
B. 12
C. 18
D. 20

MBLG8932: TIMSS 2007. Content: Geometry; Topic: Two- and three-dimensional shapes; Domain: Using concepts; Key: B.

32. *PQRSTU* is a regular hexagon. What is the measure of the angle *QUS*?



A. 30°
B. 60°
C. 90°
D. 120°

MBLG8933: PISA 2012. Content: Geometry; Topic: Two- and three-dimensional shapes; Domain: Using concepts; Key: B.

33. Shubhra has just received her car driving license and wants to buy her first car. This table below shows the details of four cars she finds at a local car dealer.

Model:	**Alpha**	**Bolte**	**Castel**	**Dezal**
Year	2003	2000	2001	1999
Advertised price (zeds)	4800	4450	4250	3990
Distance travelled (kilometers)	1.05 lakhs	1.15 lakhs	1.28 lakhs	1.09 lakhs
Engine capacity (liters)	1.79	1.796	1.82	1.783

Shubhra wants a car that meets **all** of these conditions:

- The distance traveled is not higher than 1.20 lakhs km.
- It was made in the year 2000 or a later year.
- The advertised price is **not** higher than 4500 zeds.

Which car meets Shubhra's conditions?

A. Alpha
B. Bolte
C. Castel
D. Dezal

MBLG8934: SLS. Content: Algebra; Topic: Whole numbers; Domain: Using concepts; Key: C.

34. Subtract:

$$\begin{array}{r} 6000 \\ \underline{-\ 2369} \end{array}$$

A. 4369
B. 3742
C. 3631
D. 3531

MBLG8935: SLS. Content: Algebra; Topic: Whole numbers; Domain: Using concepts; Key: A.

35. Which of the following is the simplified form of $(3x + 4y) \times (3x - 4y)$?

A. $9x^2 - 16y^2$
B. $9x^2 + 16y^2$
C. $9x^2 + 24xy + 16y^2$
D. $9x^2 - 24xy + 16y^2$