Number & Algebra

ACMNA122

Whole numbers, integers, composite numbers and prime numbers

Circle the correct answers.

① Which set of numbers is **not** made up only of **whole numbers?**

  a {55, 60, 65, 70, 75, 80, 85. 90, 100.}

  b {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.}

  c {40, $40\frac{1}{2}$, 50, $50\frac{1}{2}$, 60, $60\frac{1}{2}$, 70, $70\frac{1}{2}$.}

② Which set of numbers is **not** made up of only **integers?**

  a {-6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6.}

  b {0, 2, 4, 6, 8, 10, 12.}

  c {$-2\frac{1}{2}$, -2, $-1\frac{1}{2}$, -1, $-\frac{1}{2}$, 0, $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$.}

③ Which number is **not** a **whole number?**

  a 7   c 19.5

  b 156   d 1 000 000

④ Which number is **not** a **whole number?**

  a 1 234 256   c 100

  b -32   d 4

⑤ Which definition for a **composite number** is wrong?

  a a number that is divisible by three or more factors

  b a whole number that can be divided evenly by numbers other than 1 or itself

  c a number that is a decimal fraction but not a common fraction

⑥ What **composite number** do the factors **15 and 3 make up?**

  a 18   b 12   c 5   d 45

⑦ Which statement about **prime numbers** is **not correct?**

  a A prime number has no factors other than 1 and itself.

  b A prime number is a number that can be divided by 2 without a remainder.

  c A prime number can be divided evenly only by 1 or itself.

⑧ Which number is a **prime number?**

  a 9   b 10   c 11   d 12

Score 2 points for each correct answer! SCORE /16 0-6 8-12 14-16

Statistics & Probability

ACMSP144

Common fractions in probability

Circle the correct answers.

① A coin has two sides, head (H) and tail (T). **With all things being equal,** what is the chance of the coin coming up head when it is tossed?

  a 2 in 2

  b 1 in 1

  c 2 in 1

  d 1 in 2

② Which statement is correct and most descriptive in explaining the chance of the coin in Question 1 coming up tail when tossed?

  a the same as the chance of the coin coming up tail because coins are round

  b half the chance of the coin coming up tail because it is on the other side

  c twice as much as the chance of the coin coming up tail because it is on the other side

  d the same as the chance of the coin coming up tail because there are only two sides

③ Why were the words **all things being equal** included in Question 1?

  a to make it sound better

  b to rule out the possibility of cheating

  c to rule out the possibility of a defect or fault in the coin, as well as cheating

  d to rule out the possibility of a defect in the coin, as well as cheating and anything else that might affect the coin toss

④ Which common fraction represents a probability of 1 out of 4?

  a $\frac{4}{1}$ b $\frac{2}{4}$ c $\frac{1}{4}$ d $\frac{1}{2}$

⑤ What is the probability of a 1 coming up when a regular six-sided die is rolled? (From now on, we'll assume that **all things are equal.**)

  a one in six   c 6 out of 1

  b six in one   d 6 out of 6

⑥ What is the probability of a 6 coming up when a regular die is rolled?

  a $\frac{6}{1}$ b $\frac{1}{6}$ c $\frac{6}{6}$ d $\frac{1}{1}$

⑦ In a bag there are five different coloured marbles: white, black, red, yellow and green. Without looking, what is the chance of picking a red marble?

  a $\frac{1}{2}$ b $\frac{1}{3}$ c $\frac{1}{5}$ d $\frac{1}{1}$

⑧ Song picked a red marble out of the bag in Question 7 and then placed it back in the bag. What is the chance of picking a red marble on her next go?

  a the same as the first go

  b better than the first go

  c slightly worse than the first go

  d a lot worse than the first go

Score 2 points for each correct answer! SCORE /16 0-6 8-12 14-16

Measurement & Geometry

ACMMG135

The Metric System

Circle the correct answer.

① Which set of abbreviations of metric lengths is correct?

  a {mm = macrometre, cm = centimetre, m = millimetre, km = kilometre.}

  b {mm = millimetre, cm = centimetre, m = metre, km = kilometre.}

  c {nm = nanometre, cm = centimetre, m = mile, lm = longmetre.}

② Which set of abbreviations of metric weights (mass) is correct?

  a {mg = multigrain, g = grain, kg = kilograin, t = tonne.}

  b {mg = megagram, g = gram, kg = kilogram, t = ton.}

  c {mg = milligram, g = gram, kg = kilogram, t = tonne.}

③ Which set of abbreviations of metric volume is correct?

  a {mL = millilitre, cm^3 = cubic centimetre, L = litre, m^3 = cubic metre.}

  b {mL = megalitre, cm^3 = cubic metre, L = litre, m^3 = megametre.}

  c {ml = millilitre, cm^3 = centimetre, L = litre, m^3 = cubic metre.}

This table shows commonly used metric prefixes. Write the missing entries below.

Prefix	Symbol	Numerically	Name
giga	G	1 000 000 000	4
mega	M	5	million
6	k	1000	thousand
centi	c	0.01	7
milli	8	0.001	thousandth
micro	μ	0.000 001	9
nano	n	0.000 000 001	billionth

④ _____

⑤ _____

⑥ _____

⑦ _____

⑧ _____

⑨ _____

Score 2 points for each correct answer! SCORE /18 0-6 8-14 16-18

Problem Solving

ACMNA122

① The number 241 is made up of three digits that add up to 7: **2 + 4 + 1 = 7.** What even whole number is <30 and made up of digits that add up to 10?

_____

② What two whole numbers are >100, <200 and made up of different odd digits that add up to 9?

_____   _____

③ On her next birthday, Julie's age will be the fifth prime number. How old is she now?

_____

④ What prime number is <30 and has digits that add up to 5?

_____

⑤ Even numbers added together will always equal an even number. True or false?

_____

⑥ Odd numbers added together will always equal an odd number. True or false?

_____

⑦ Which odd number when doubled is >24 and <30?

_____