Instructions

QAMT Rockhampton is delighted to make these questions available to you!

You should have received the following :
* Instructions with Score Sheet
* Individual Questions
* Individual Questions Answers
* Relay Questions
* Relay Questions Answers
* Team Questions
* Team Questions Answers Sheet
* Team Questions Answers
* Shoot Out Questions
* Student Participation Certificate
* Teacher PD Certificate

AIMS
The students will:
- advance their interest in creative problem solving
- acquire problem solving skills and processes
- develop teamwork skills
- be highly involved in a session of intellectual fun in a scholarly atmosphere.

FORMAT
The competition consists of five events:

Individual Event	Each student has 3 minutes to individually complete a set of questions without a calculator. This focuses on using mental maths quickly.
Relay Event	Students work in pairs and rotate around as they solve questions. There are 25 questions to be answered in 30 minutes.
Team Event	Each team has 30 minutes to work together and answer 10 questions.
Estimation Event	During the Teams Event, students will be asked an estimation question. Each team has time to confer and furnish their best guess.
Shoot Out Event	Students will compete individually responding to questions read aloud until only one student from each year level remains. This focuses on listening carefully to the question being asked and using mental maths quickly.

TEAMS

A team consists of 5 students in the appropriate year levels. This can be a team where all 5 students are the same year level or mixed teams of different year levels.

MATERIALS

Each student MUST bring:

- a calculator of any type
- pens, pencils, eraser, ruler

SUPERVISORS

One adult or senior student MUST accompany EACH team. They will assist as a Supervisor in all events. This need not be a teacher nor needs any mathematical knowledge but must be Year 10 or older and needs to be able to follow simple instructions given to them. If a team does not have a supervisor, it will be difficult for them to participate.

STUDENT PARTICIPATION CERTIFICATE

Print one per student.

TEACHER PD CERTIFICATE

Print one per teacher involved in organising, hosting, or supervising the challenge.

Every effort has been made to ensure the questions and answers are correct. Adjust as necessary should you find an error.

Individual Event

HOST MATERIALS

* Individual Questions
  - Five pages, single sided page of 20 questions per student.
  - Each student should have different questions.
  - *Copy one set of five per team.*
* Individual Questions Answers
  - One page, double sided.
  - *Copy one per team supervisor. These should not be shown to students.*

STUDENT MATERIALS

* Students should have a pencil or pen.
* No calculators allowed.

PROCEDURE

- Students have 3 minutes to answer as many questions as possible.
- Students work individually. They should not consult or help each other.
- Units are not required.
- Give each student one page face down.
- As the timer is started, students flip over the page and begin work.
- Students stop work after 3 minutes.
- Supervisor collects the five sheets from the team.

Keep them together. Individual sheets do not have space for identification.

- Supervisor should write the Year, School, and Team Number on the Individual Questions Answers sheet.
- Supervisor marks each sheet submitted by students.

SCORING

* Each question is worth one mark. Award full marks even if units are not included.
* Each student can earn a maximum of 20 marks.
* The team can collectively earn a maximum of 100 marks for this event.

Relay Event

HOST MATERIALS

* Relay Questions
  - 25 pages, one question per single sided page
  - *Copy one set per team, single sided and stapled.*
* Relay Questions Answers
  - One page, single sided.
  - *Copy one per team supervisor. These should not be show to students.*

STUDENT MATERIALS

* Students should have a pencil or pen.
* Calculators are allowed.
* Spare scribble paper may be used, although each question page should have enough space for working out.

PROCEDURE

- Students have 30 minutes to complete as many questions as possible.
- Students work in pairs with a pivot on the end and rotate, as per the instructions on the next page.
- Units are required when applicable.
- Supervisor should write the Year, School, and Team Number on the Relay Questions Answers sheet.
- Supervisor keeps score, as per the instructions on the next page.
- Question is incorrect if units are not included.

SCORING

* Each question is worth a maximum of 8 points.
* The team can collectively earn a maximum of 200 points for this event.

Queensland Association of Mathematics Teachers – Rockhampton Branch
Maths Teams Challenge 2020

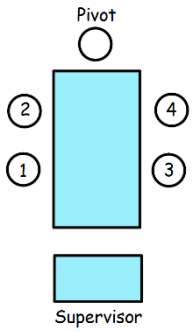
Supervisor's Instructions - RELAY Event

Equipment
1 set of Relay Questions – questions 1 to 25 arranged in the correct order
1 Relay Answer / Score Sheet *(Please ensure that this sheet CANNOT be seen by students AT ANY TIME)*

Identification of Teams
On the Answer Sheet:
CIRCLE the appropriate YEAR LEVEL
WRITE the SCHOOL NAME and TEAM NUMBER

Procedure
Team splits into two pairs and a "Pivot".

One pair should be seated on the left side of the table (positions 1 and 2) and one pair should be seated on the right side of the table (positions 3 and 4). The fifth student should be standing at the end of the table in the "Pivot" position.



⇒ The supervisor hands Q1 to players in Positions 1 & 2, and Q2 to players in Positions 3 & 4. The players in each pair work collaboratively. Input from the other pair or the Pivot is **NOT** permitted.

⇒ Players write their answers on the question sheet and hand it to the supervisor for marking. The marker records the answer as correct or incorrect in the appropriate column on the Relay Event Score Sheet.

⇒ Each time the pair of players in Positions 1 & 2 completes a question by getting it correct, or has 3 incorrect answers, or passes, the player in the Pivot Position moves to Position 2 and that player moves to Position 1. The player in Position 1 moves to the Pivot Position.

⇒ Similarly, each time the pair of players in Positions 3 & 4 complete a question by getting it correct, or has 3 incorrect answers, or passes, the player in the Pivot Position moves to Position 4 and that player moves to Position 3. The player in Position 3 moves to the Pivot Position.

⇒ Each time a question is answered correctly, or has been answered incorrectly 3 times, or has been passed by a pair, and the players have rotated, the supervisor hands the next question to the new pair.

This process continues until either (a) time has run out or (b) all questions have been attempted.

When the instruction to BEGIN is given, the pair of students on the left is given Question 1 and the pair of students on the right is given Question 2.

The Pivot cannot give any assistance to either pair working on a question, and the pairs cannot assist each other or exchange questions.

PASSED QUESTIONS MAY NOT BE ATTEMPTED LATER.

Time Allowed
The relay event will run for about 45 minutes. Students have approximately 30 or 40 minutes to complete as many of the 25 questions available.

If the team has answered all questions before time has expired, the event continues for all other teams. That is, the event is not simply a 'race'. Encourage students to further review the questions, but they cannot score any more points.

Scoring
For each Relay question circle the score box on the ANSWER SHEET as follows:

If the answer provided on the FIRST attempt is CORRECT
8 points

If the answer provided on the SECOND attempt is CORRECT
6 points

If the answer provided on the THIRD attempt is CORRECT
4 points

If the answer provided on the THIRD attempt is INCORRECT
OR
If the team chooses to PASS on a question at any time
0 points

When an answer is presented for marking, you may only state CORRECT or INCORRECT and the number of the attempt. No hints or guidance may be given to the students, even if it is a second or third attempt.

When time is called, if a team has already passed an answer to you, it will be accepted and marked as usual.

You and the team captain will total the number of points for that team and record that result on the bottom of the score sheet.

The score sheet will be collected from you.

Disputes / Confusion
If at any time during the event you have a procedural concern, or you are unsure whether an answer you have received is correct or not, raise your hand to request assistance. A judge will assist you immediately.

Estimation Event

* Runs concurrently with the Team event.

HOST MATERIALS
** Host school will need to find something students can estimate which has a known answer.*

Some ideas are included, but anything similar that host schools have would be fantastic too.
- Fill a jar with lollies/jelly beans/skittles/m&m's/etc.

Students estimate the number of lollies inside the jar.
- Fill a translucent box with marbles or dice.

Students estimate the number of items inside the box.
- Fill a jar with coloured sand.

Students estimate the percentage or proportion of sand in the jar which is a particular colour.
- Print a picture of a pepperoni pizza with lots of pepperoni on it.

Students estimate how many slices of pepperoni are on the pizza by looking at the picture.
- Fill a container with liquid.

Students estimate the number of millilitres of liquid in the jar.

STUDENT MATERIALS
* see the Team Event

PROCEDURES
- As students are working on the Team Questions, bring this around to each team.
- Give them time to view the item and agree on an answer.

-- Each team writes their agreed answer in the Estimation Event Response blank at the bottom of the Team Questions Answer Sheet.

The time each team has to form their guess should be short enough to encourage estimation rather than actually counting and so that every team will have a chance to do so before the Team Event finishes. This can change dependent on the number of teams present and the nature of the estimation being done.

SCORING
* The team with the closest guess to the known answer is declared the winner.
* No points are awarded for this event. It may be used as an overall tie breaker later or just something fun to do. If host schools do not have something for this event, then leave this part of the Team Questions Answer Sheet blank.

Team Event

HOST MATERIALS

* Team Questions
  - One page, double sided. 10 questions.
  - *Copy one per student.*
* Team Questions Answers Sheet
  - One page, single sided.
  - *Copy one per team.*
* Team Questions Answers
  - One page, single sided.
  - *Copy one per supervisor. These should not be shown to students.*

STUDENT MATERIALS

- Students should have a pencil or pen.
- Calculators are allowed.
- Spare scribble paper. The Team Questions sheet does not have room for working out.

PROCEDURE

- Students have 30 minutes to complete as many questions as possible.
- Students work as a team. They may consult with each other.
- Units are required when applicable.
- Give each student a copy of the Team Questions.
- Give each team a copy of the Team Questions Answers Sheet
- Students should write the Year, School, and Team Number on the Team Questions Answers Sheet.
- Before time is up, the team must have written their final agreed answer to each question on the Team Questions Answers Sheet.
- At the end of 30 minutes, the supervisor collects the Team Questions Answers Sheet.
- Mark according to the answers provided. Question is incorrect if no units are included.

SCORING

- Points vary per question. Award points as noted.
- The team can collectively earn a maximum of 200 points for this event.

Supervisors may attempt the questions from a separate copy of the Team Questions. *Make additional copies or the Team Questions and Team Questions Answer Sheet as necessary.*

Shoot Out Event

HOST MATERIALS

* An emcee to read the questions aloud.
* Shoot Out Questions
  - *Copy one set for the emcee.*

STUDENT MATERIALS

* Scribble paper and large or dark pens.

or

* A mini whiteboard with a whiteboard marker

PROCEDURE

- Students work individually. They should not consult with each other. They should cover their responses until directed.
- Host reads the first question aloud clearly to students twice.
- Repeating the question more than twice is not allowed.
- Students listen to the question being asked.
- Students have no more than 10 seconds to answer the question.
- Students write their answer large and legible on a piece of scribble paper or mini whiteboard. This must be large enough for the supervisor to see.
- Units are not required.
- When directed by the host, students hold up their answer for the supervisor to see.
- Host reads out the correct answer.
- Supervisor adjudicate student responses.
- Students with correct answers continue on with the next question.
- Students with incorrect answers are eliminated.
- Host reads aloud the next question clearly twice.
- Continue with this until there is only one student left.

SCORING

- The last remaining student is declared the Shoot-Out Winner.
- No points are awarded for this event. QAMT uses it an event to engage the students as the final scores are being tallied by other facilitators in the room for the results presentation at the conclusion of the competition.

Maths Teams Challenge Score Sheet

Team Number	Individual (out of 100)	Relay (out of 200)	Team (out of 200)	Total (out of 500)

Final Results

Place	Team Number
First	
Second	
Third	

Queensland Association of Mathematics Teachers - Rockhampton Branch
Maths Teams Challenge 2020 - Year 5 & 6 Individual Questions

Student 1

Instructions : Calculators are not allowed. Write the answer to each question on the line provided.

_____ 1) $3 + 8$

_____ 2) Write with numbers : two hundred and nine.

_____ 3) 9×6

_____ 4) How many millimetres are in 6 cm?

_____ 5) $6 + 4 \times 3$

_____ 6) Round to the nearest hundred : 658.

_____ 7) In 4630, which digit is in the tens place?

_____ 8) 91×100

_____ 9) Write $\frac{8}{10}$ as a decimal.

_____ 10) How many zeros does ninety thousand have?

_____ 11) Reduce $\frac{8}{12}$ to lowest terms.

_____ 12) How many sides does a pentagon have?

_____ 13) After spending 40¢ of \$1.50, how much is left?

_____ 14) Which is largest? 4, 4.1, 3, 3.21

_____ 15) $\frac{8}{9} - \frac{7}{9}$

_____ 16) A square has sides 5 cm long. Find its perimeter.

_____ 17) $\frac{380}{10}$

_____ 18) $200 - 86$

_____ 19) Which is smallest? 786, 678, 767, 687

_____ 20) If it is 11:59 am, what time is it 5 minutes later?

Queensland Association of Mathematics Teachers - Rockhampton Branch
Maths Teams Challenge 2020 - Year 5 & 6 Individual Questions

Student 2

Instructions : Calculators are not allowed. Write the answer to each question on the line provided.

_____ 1) $9 + 8$

_____ 2) Write with numbers : three hundred and eight.

_____ 3) 7×6

_____ 4) How many millimetres are in 8 cm?

_____ 5) $5 + 4 \times 2$

_____ 6) Round to the nearest hundred : 853.

_____ 7) In 3519, which digit is in the tens place?

_____ 8) 24×100

_____ 9) Write $\frac{6}{10}$ as a decimal.

_____ 10) How many zeros does seventy thousand have?

_____ 11) Reduce $\frac{10}{15}$ to lowest terms.

_____ 12) How many sides does a rhombus have?

_____ 13) After spending 40¢ of \$1.70, how much is left?

_____ 14) Which is largest? 7, 7.1, 6, 6.21

_____ 15) $\frac{7}{8} - \frac{6}{8}$

_____ 16) A square has sides 6 cm long. Find its perimeter.

_____ 17) $\frac{960}{10}$

_____ 18) $600 - 86$

_____ 19) Which is smallest? 453, 345, 434, 354

_____ 20) If it is 11:58 am, what time will it be 6 minutes later?

Queensland Association of Mathematics Teachers - Rockhampton Branch
Maths Teams Challenge 2020 - Year 5 & 6 Individual Questions

Student 3

Instructions : Calculators are not allowed. Write the answer to each question on the line provided.

_____ 1) $4 + 8$

_____ 2) Write with numbers : four hundred and six.

_____ 3) 5×6

_____ 4) How many millimetres are in 5 cm?

_____ 5) $8 + 2 \times 5$

_____ 6) Round to the nearest hundred : 158.

_____ 7) In 2468, which digit is in the tens place?

_____ 8) 83×100

_____ 9) Write $\frac{7}{10}$ as a decimal.

_____ 10) How many zeros does eighty thousand have?

_____ 11) Reduce $\frac{12}{15}$ to lowest terms.

_____ 12) How many sides does a parallelogram have?

_____ 13) After spending 70¢ of $1.90, how much is left?

_____ 14) Which is greatest? 5, 5.14, 6.3, 6

_____ 15) $\frac{4}{5} - \frac{3}{5}$

_____ 16) A square has sides 4 cm long. Find its perimeter.

_____ 17) $\frac{830}{10}$

_____ 18) $300 - 86$

_____ 19) Which is smallest? 897, 789, 878, 798

_____ 20) If it is 11:57 am, what time will it be 4 minutes later?

Queensland Association of Mathematics Teachers - Rockhampton Branch
Maths Teams Challenge 2020 - Year 5 & 6 Individual Questions

Student 4

Instructions : Calculators are not allowed. Write the answer to each question on the line provided.

_____ 1) $9 + 8$

_____ 2) Write with numbers : nine hundred and six.

_____ 3) 8×6

_____ 4) How many millimetres are in 2 cm?

_____ 5) $7 + 2 \times 3$

_____ 6) Round to the nearest hundred : 552.

_____ 7) In 1357, which digit is in the tens place?

_____ 8) 83×100

_____ 9) Write $\frac{9}{10}$ as a decimal.

_____ 10) How many zeros does sixty thousand have?

_____ 11) Reduce $\frac{14}{21}$ to lowest terms.

_____ 12) How many sides does a hexagon have?

_____ 13) After spending 50¢ of \$1.60, how much is left?

_____ 14) Which is largest? 3, 3.4, 2, 2.14

_____ 15) $\frac{6}{7} - \frac{5}{7}$

_____ 16) A square has sides 2 cm long. Find its perimeter.

_____ 17) $\frac{290}{10}$

_____ 18) $500 - 86$

_____ 19) Which is smallest? 675, 567, 656, 576

_____ 20) If it is 11:56 am, what time will it be 7 minutes later?

Queensland Association of Mathematics Teachers - Rockhampton Branch
Maths Teams Challenge 2020 - Year 5 & 6 Individual Questions

Student 5

Instructions : Calculators are not allowed. Write the answer to each question on the line provided.

_____ 1) $7 + 8$

_____ 2) Write with numbers : six hundred and two.

_____ 3) 4×6

_____ 4) How many millimetres are in 7 cm?

_____ 5) $4 + 5 \times 3$

_____ 6) Round to the nearest hundred : 253.

_____ 7) In 9750, which digit is in the tens place?

_____ 8) 84×100

_____ 9) Write $\frac{2}{10}$ as a decimal.

_____ 10) How many zeros does fifty thousand have?

_____ 11) Reduce $\frac{6}{9}$ to lowest terms.

_____ 12) How many sides does an octagon have?

_____ 13) After spending 60¢ of $1.80, how much is left?

_____ 14) Which is largest? 8, 8.14, 9.3, 9

_____ 15) $\frac{5}{6} - \frac{4}{6}$

_____ 16) A square has sides 3 cm long. Find its perimeter.

_____ 17) $\frac{750}{10}$

_____ 18) $400 - 86$

_____ 19) Which is smallest? 564, 456, 545, 465

_____ 20) If it is 11:54 am, what time will it be 8 minutes later?

Queensland Association of Mathematics Teachers - Rockhampton Branch
Maths Teams Challenge 2020 - Year 5 & 6 Individual Questions Answers

Student 1 Answers

1) 11
2) 209
3) 54
4) 60
5) 18
6) 700
7) 3
8) 9100
9) 0.8
10) 4
11) $\frac{2}{3}$
12) 5
13) \$1.10
14) 4.1
15) $\frac{1}{9}$
16) 20
17) 38
18) 114
19) 678
20) 12:04

Student 2 Answers

1) 17
2) 308
3) 42
4) 80
5) 13
6) 900
7) 1
8) 2400
9) 0.6
10) 4
11) $\frac{2}{3}$
12) 4
13) \$1.30
14) 7.1
15) $\frac{1}{8}$
16) 24
17) 96
18) 514
19) 345
20) 12:04

Student 3 Answers

1) 12
2) 406
3) 30
4) 50
5) 18
6) 200
7) 6
8) 8300
9) 0.7
10) 4
11) $\frac{4}{5}$
12) 4
13) \$1.20
14) 6.3
15) $\frac{1}{5}$
16) 16
17) 83
18) 214
19) 789
20) 12:01

Queensland Association of Mathematics Teachers - Rockhampton Branch
Maths Teams Challenge 2020 - Year 5 & 6 Individual Questions Answers

Student 4 Answers

1) 17
2) 906
3) 48
4) 20
5) 13
6) 600
7) 5
8) 8300
9) 0.9
10) 4
11) $\frac{2}{3}$
12) 6
13) \$1.10
14) 3.4
15) $\frac{1}{7}$
16) 8
17) 29
18) 414
19) 567
20) 12:03

Student 5 Answers

1) 15
2) 602
3) 24
4) 70
5) 19
6) 300
7) 5
8) 8400
9) 0.2
10) 4
11) $\frac{2}{3}$
12) 8
13) \$1.20
14) 9.3
15) $\frac{1}{6}$
16) 12
17) 75
18) 314
19) 456
20) 12:04

Scores

Year _____

School _____

Team _____

Student 1	
Student 2	
Student 3	
Student 4	
Student 5	
TOTAL	

out of 100

Queensland Association of Mathematics Teachers – Rockhampton Branch
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

1) Calculate the value of $2 + 6 \times (5 - 1) \div 8$.

Queensland Association of Mathematics Teachers – Rockhampton Branch
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

2) Place $+$, $-$, or $\times$ operation in each box to make the equation correct.

$$9 \square 5 \square 5 = 50$$

Queensland Association of Mathematics Teachers – Rockhampton Branch
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

3) The digits 8, 4, 9, 2, and 7 are arranged to form five-digit, even numbers. What is the tens digit in the largest of these numbers?

4) What is the largest whole number that rounds to 6000 when rounding to the nearest thousand?

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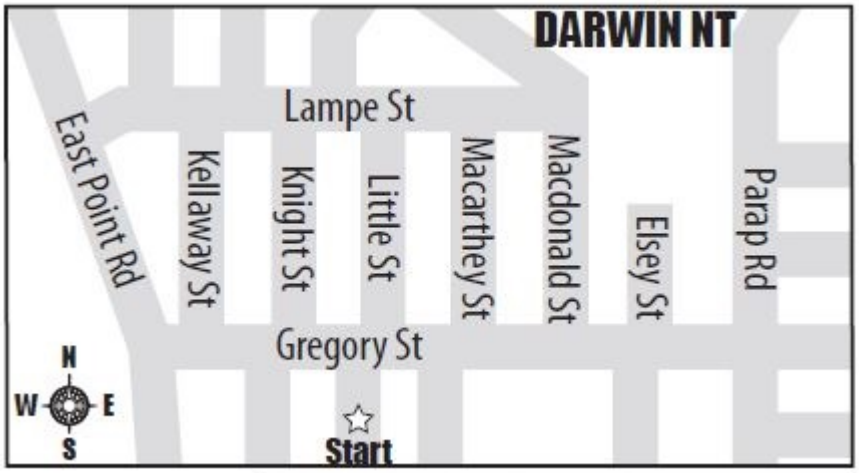
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

5) Walk north from the starting point. At the first intersection proceed east. At the second intersection on your left walk north. What street are you in?



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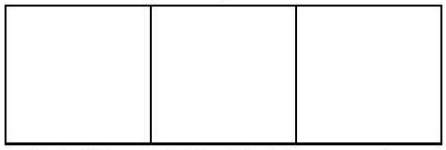
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

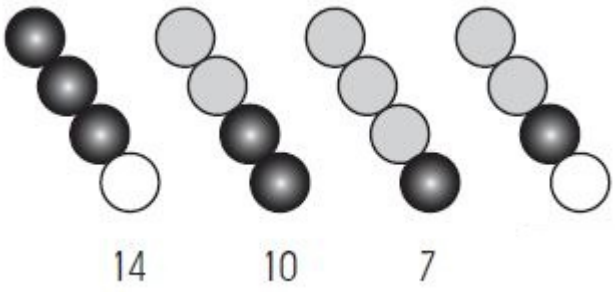
6) A rectangle is formed from three squares, as shown in the diagram.



The perimeter of this rectangle is 24 cm. What is the total area of the rectangle?

Queensland Association of Mathematics Teachers – Rockhampton Branch
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

7) Each bead has a value according to its colour. The values of the first three strings of beads are given. What is the value of the last string of beads?



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Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

8) Alan thinks of a number, subtracts 10, and then multiplies by 2. If the result is 24, what was the original number Alan was thinking of?

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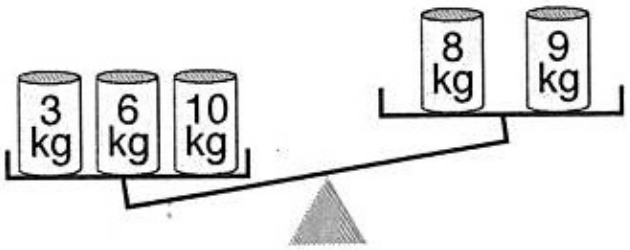
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

9) Which two weights need to be swapped to balance the scales?



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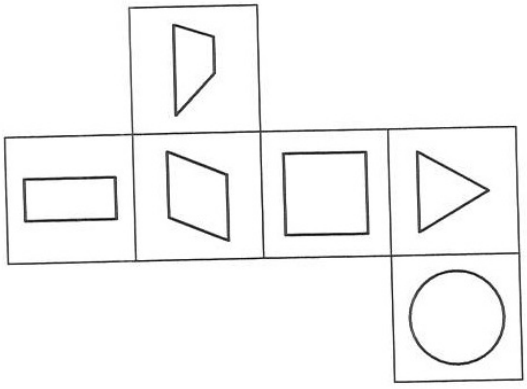
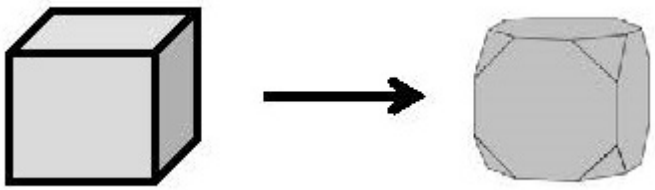
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

10) A net of a cube is shown in the diagram. When this net is made into a cube, and the square is in the front facing you, identify the shape in the back facing away from you.

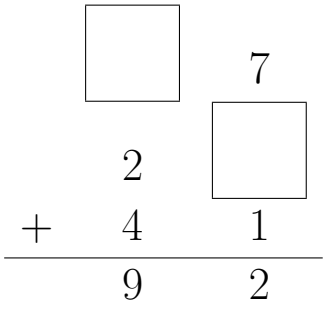


11) A cube has all of its corners cut off, as shown.



How many faces does the new shape have?

12) Fill in the missing digits in the sum.



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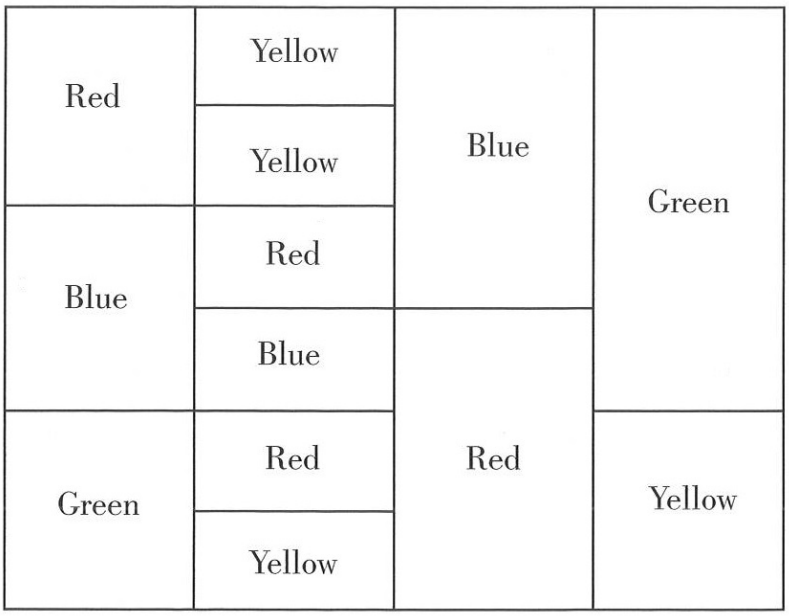
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

13) Write the fraction of the following shape that is labelled Blue. Give the answer in lowest terms.



14) Eight books cost as much as two shirts. If one shirt costs $44, determine the price of six books.

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Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

15) A box has 3 red, 4 blue, and 6 green raffle tickets. Tickets are drawn out of the box, at random, one at at time, without replacement. Determine the least number of raffle tickets that must be drawn out of the box to be certain of having 2 green tickets?

Queensland Association of Mathematics Teachers – Rockhampton Branch
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

16) At 4:18 pm, you start a 90 minute tutoring lesson. What time would your lesson finish?

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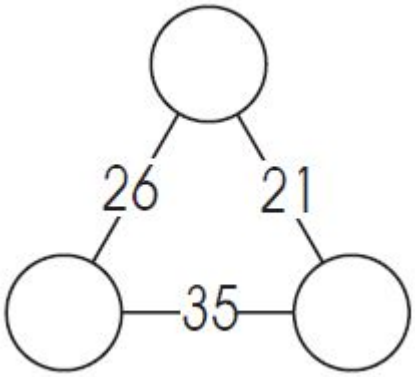
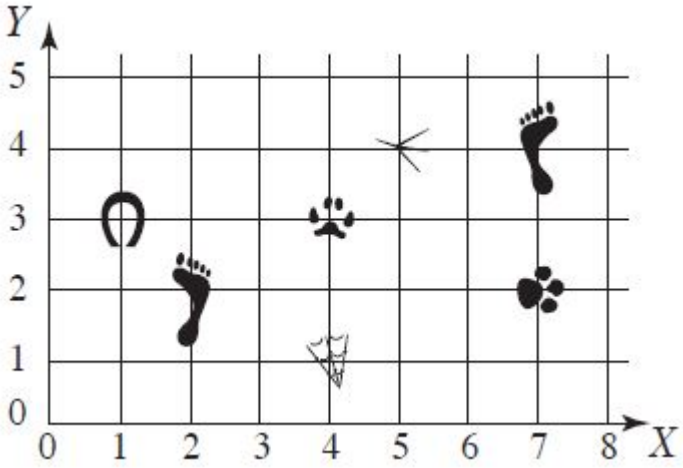
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

17) Enter a number in each circle so that the number on each line equals the sum of the numbers at each end.



18) Give the coordinates of the person's left footprint.



$\left(\square, \square\right)$

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19) A square has the same number of metres in its perimeter as there are square metres in its area. How long is one side of the square?

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20) A class of Year 4 students is 60% girls. If there are 12 boys in the class, find the total number of students in the class.

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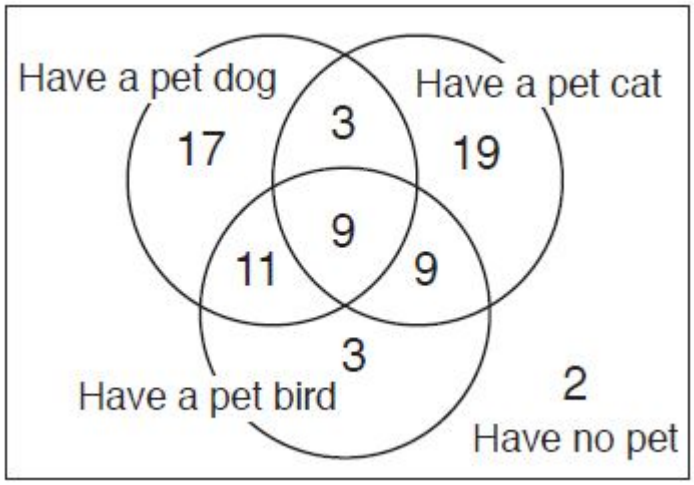
21) The sum of the digits in a number is 11. When rounded to the nearest hundred, the result is 500. If rounding to the nearest ten, this gives 530. Identify this number.

22) Gloria bought two 270 ml drinks, one for Herbert and one for Freya. Freya couldn't finish her drink, so she gave the remainder to Herbert. How much did Herbert drink if he ended up drinking exactly twice as much drink as Freya?

23) Based on the Venn diagram below, how many families have both a pet cat and a pet dog but no pet bird?



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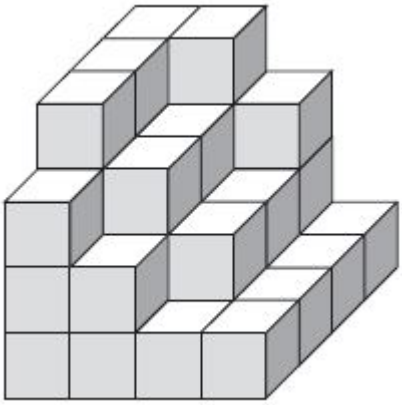
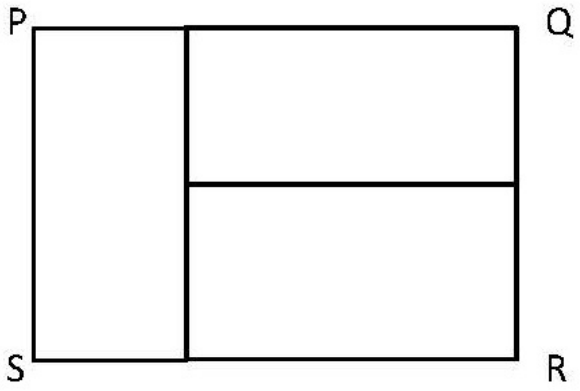
Maths Teams Challenge 2020 – Year 5 & 6 Relay Questions

24) How many cubes are there in the arrangement pictured below?



25) The large rectangle $PQRS$ is made up from 3 identical small rectangles, as shown. The total area is 150 cm^2.



Considering only one of the small rectangles, find the length of the shorter side.

Queensland Association of Mathematics Teachers – Rockhampton Branch
Year 5 & 6 Maths Teams Challenge 2020 – Relay Questions Answers

Year Level : 5 or 6 (circle one)

School : _____ Team Number : _____

Question	**Relay Answers**	**Attempt**	**Score**
R25	5 cm	1 2 3 P	8 6 4 0
R24	39 cubes	1 2 3 P	8 6 4 0
R23	3 families	1 2 3 P	8 6 4 0
R22	360 ml	1 2 3 P	8 6 4 0
R21	533	1 2 3 P	8 6 4 0
R20	30 students	1 2 3 P	8 6 4 0
R19	4 m	1 2 3 P	8 6 4 0
R18	$(7, 4)$	1 2 3 P	8 6 4 0
R17	counterclockwise from the top : 6, 20, 15	1 2 3 P	8 6 4 0
R16	5:48 pm	1 2 3 P	8 6 4 0
R15	9 tickets	1 2 3 P	8 6 4 0
R14	\$66	1 2 3 P	8 6 4 0
R13	$\frac{1}{4}$	1 2 3 P	8 6 4 0
R12	**27** + **24**	1 2 3 P	8 6 4 0
R11	14	1 2 3 P	8 6 4 0
R10	rectangle	1 2 3 P	8 6 4 0
R9	10 and 9	1 2 3 P	8 6 4 0
R8	22	1 2 3 P	8 6 4 0
R7	8	1 2 3 P	8 6 4 0
R6	27 cm^2	1 2 3 P	8 6 4 0
R5	Macarthey St	1 2 3 P	8 6 4 0
R4	6499	1 2 3 P	8 6 4 0
R3	4	1 2 3 P	8 6 4 0
R2	$9 \times 5 + 5$	1 2 3 P	8 6 4 0
R1	5	1 2 3 P	8 6 4 0
Total			

out of 200

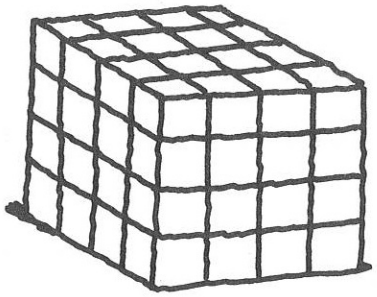
Queensland Association of Mathematics Teachers – Rockhampton Branch
Maths Teams Challenge 2020 – Year 5 & 6 Team Questions

1) There are 86 legs on the 38 animals at the farm. Each animal has either 2 legs or 4 legs. How many 2-legged animals are there?
(10 points)

2) What is the weight of six watermelons if one and a half watermelons of the same size weigh six kilograms.
(10 points)

3) A number of soccer players are standing in a circle. They are evenly spaced and the second player is directly opposite the seventh player. How many soccer players are there altogether?
(10 points)

4) Small cubes or uniform size are stacked to make the block shown. The entire block is painted blue around the outsides. How many cubes are unpainted?
(20 points)



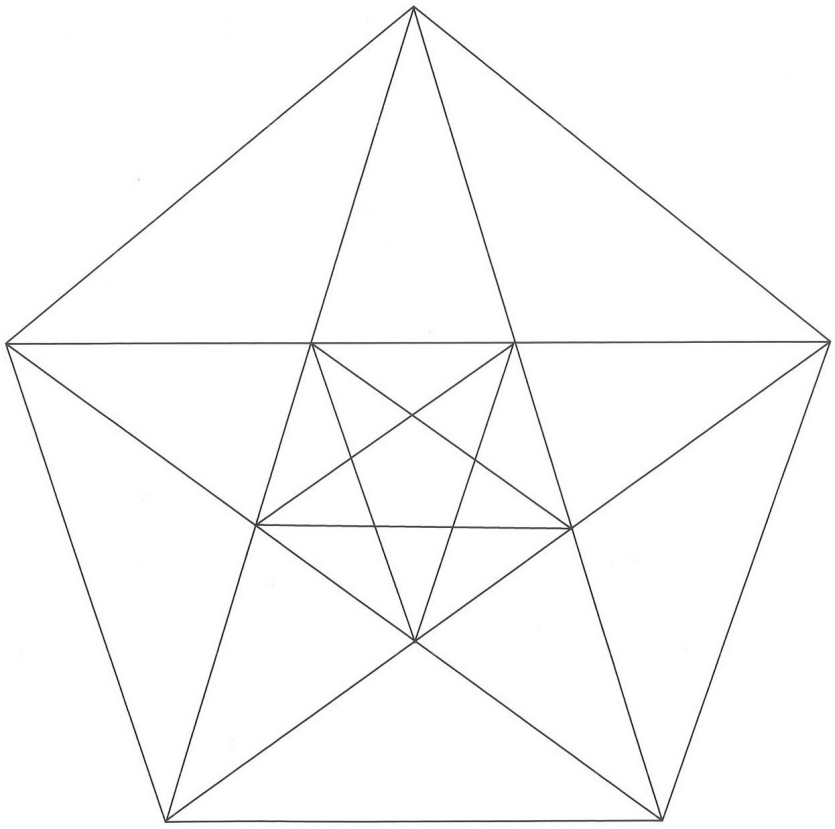
5) When I opened my new maths book, the sum of the two page numbers facing me was 317. What was the number on the next page?
(20 points)

6) A big bug ate 54 smaller bugs in 4 days. Each day, it ate 5 more bugs than it did on the previous day. How many small bugs did the big bug eat on the fourth day?
(20 points)

7) Daisy bought a shirt for \$12.50 and a pair of jeans for \$5 more than twice the price of the shirt. She paid with a \$50 note. How much change should she get?
(20 points)

8) Naomi collected data on the temperature in Graceland over a six hour period. She found the temperature would rise 4^o C and rise another 3^o C, then drop 2^o C. Next, it rose 1^o C and dropped 2^o C, before finally dropping a further 3^o C. The temperature at the end of the 6 hours was -5^o C. What was the starting temperature?
(30 points)

9) How many triangles, of any size, are included in this pentagon?
(30 points)



10) Gary Grasshopper takes 26 steps with each of his 6 legs. Spencer Spider has eight legs. What is the minimum steps per leg that Spencer needs to take to exceed the number of steps Gary took?
(30 points)

Queensland Association of Mathematics Teachers – Rockhampton Branch
Year 5 & 6 Maths Teams Challenge 2020 – Team Questions Answers Sheet

Year Level : 5 or 6 (circle one)

School : _____ Team Number : _____

Question	Answers	Score	Points
T1			10
T2			10
T3			10
T4			20
T5			20
T6			20
T7			20
T8			30
T9			30
T10			30
Total			

out of 200

Estimation Event Response : _____

Queensland Association of Mathematics Teachers − Rockhampton Branch
Year 5 & 6 Maths Teams Challenge 2020 − Team Questions Answers

Question	**Answers**	**Points**
T1	33 animals	10
T2	24 kg	10
T3	10 players	10
T4	8 cubes	20
T5	160	20
T6	21 bugs	20
T7	\$7.50	20
T8	-6^o C	30
T9	85 triangles	30
T10	20 steps	30
Total		200

Queensland Association of Mathematics Teachers – Rockhampton Branch
Maths Teams Challenge 2020 – Year 5 & 6 Shoot Out Questions

Round 1

1. How many hours are there in one day?
   24
2. What is 12 squared?
   144
3. How many sides does a triangle have?
   3
4. Convert 0.46 into a percentage.
   46
5. How many centimetres are in one metre?
   100
6. Give the measure of a right angle.
   90
7. The opposite mathematical operation to division is . . .
   multiplication
8. Give the value of pi to two decimal places.
   3.14
9. Give one half as a decimal.
   0.5
10. A quadrilateral shape has how many sides?
    4
11. How many minutes are in one hour?
    60
12. Where is the numerator of the fraction - the top or the bottom?
    top
13. How many grams are in a kilogram?
    1000
14. Give 25 percent as a fraction in lowest terms.
    $\mathbf{\frac{1}{4}}$
15. How many millimetres are in one centimetre?
    10
16. The total sum of all interior angles in a triangle is equal to . . .
    180
17. Compute 2 cubed.
    8
18. The opposite mathematical operation to addition is . . .
    subtraction
19. What is the square root of 81?
    9
20. What type of triangle always has one 90 degree angle?
    a right triangle

Queensland Association of Mathematics Teachers − Rockhampton Branch
Maths Teams Challenge 2020 − Year 5 & 6 Shoot Out Questions

Round 2

1. Convert 18 centimetres into millimetres.
   180

2. State the first thing performed in the order of operations.
   brackets or parenthesis

3. In statistics, the average is otherwise known as . . .
   the mean

4. What is the tens digit in the number one thousand three hundred and eighty seven?
   8

5. How many degrees are in one revolution?
   360

6. What is the probability of rolling a 3 on a six-sided die?
   $\mathbf{\frac{1}{6}}$

7. Give an example of an obtuse angle.
   Any value between 90 and 180 degrees.

8. Reduce $\frac{12}{18}$ to a fraction in lowest terms.
   $\mathbf{\frac{2}{3}}$

9. How many seconds are in one and a half minutes?
   90

10. Compute $1^2 + 2^2$.
    5

11. Convert 12 kilograms to grams.
    12,000

12. List the first five positive multiples of 2.
    2, 4, 6, 8, 10

13. In 5.462, which digit is in the tenths place?
    4

14. Give an example of an acute angle.
    Any value between 0 and 90 degrees.

15. List all possible outcomes of flipping a fair coin.
    heads or tails

16. The diameter of a circle is how many times the radius?
    2

17. List all the factors of 6.
    6, 3, 2, 1

18. Which is smaller, one third or one eighth?
    one eighth

19. If one week has 7 days, how many weeks are in 42 days?
    6

20. Name the quadrilateral with all four sides the same length but no right angles.
    rhombus

Queensland Association of Mathematics Teachers

Rockhampton Branch

Maths Teams Challenge

_____

name

from _____

school

participated at this competition in Year _____

_____

date

Queensland Association of Mathematics Teachers

Rockhampton Branch

This is to certify that

_____

supervised at the Year 5 & 6 Maths Teams Challenge incorporating engaging mathematical activities.

AITSL Standard 3 – Plan for and implement effective teaching and learning
AITSL Standard 7.4 – Engage with professional teaching networks and broader communities

2.5 hours of professional development

_____
date

Suella Lye
President