30 min

1. What is the answer to 77 ÷ 0.7?
   A 0.11   B 1.1   C 11   D 110

2. Riley knows that 18 × 37 = 666.
   What is 1.8 × 0.37?
   A 66.6   B 6.66   C 0.666   D 0.0666

3. Which is the largest?
   A 7%   B 0.7   C $\frac{1}{7}$ D 0.077

4. Which is equivalent to $\frac{13}{100} + \frac{7}{10}$?
   A 0.137   B 0.713   C 0.2   D 0.83

5. 1.6 + 3.478 + 0.09 = ☐

6. What number is halfway between 0.17 and 0.43?
   A 0.25   B 0.35
   C 0.3   D none of these

7. $\frac{3-0.6}{1+0.2} = ?$
   A 2   B 2.2   C 2.5   D 2.6

8. What is the seventh number in this pattern?
   10, 8.6, 7.2, 5.8, ...   ☐

9. The temperature at midnight was −21°C and at 8 am it was −8°C. How much had the temperature risen?   ☐ °C

10. At the start of a meeting, the ratio of men to women present was 5 to 4. There were 72 people at the meeting. 5 men and 12 women later left the meeting. What was the ratio of men to women after they had left?
    A 7 to 4   B 5 to 4   C 5 to 12   D 8 to 5

11. What is 0.02 ÷ 0.8?
    A 0.025   B 0.25   C 2.5   D 25

12. Which is **not** equal to 0.6?
    A 0.15 + 0.45   B 1 − 0.4
    C 0.3 × 0.2   D 0.12 ÷ 0.2

13. Which statement is correct?
    A 0.2 < 0.05   B −0.3 > −0.4
    C −0.6 < −0.7   D −0.18 > −0.153

14. The positions of two numbers, (P and Q), are shown on the number line.
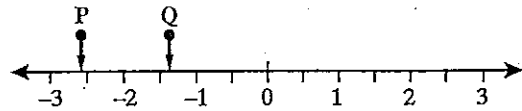
What could be the positions of P and Q?
A P is −3.4 and Q is −2.6
B P is −2.4 and Q is −1.6
C P is −3.6 and Q is −2.4
D P is −2.6 and Q is −1.4

15. A business made a profit of $2500 one month and a loss of $750 the next month. What was the difference between these results? $ ☐

16. The ratio of chooks to ducks in Charlie's fowl yard was 8 to 3. Charlie bought 12 more chooks so that he now has 44 chooks. What is the ratio of chooks to ducks now?
    A 8 to 3   B 11 to 3   C 20 to 3   D 44 to 3

17. Farid has an old measuring container that measures quantity in gallons. He measured a quantity of fluid and found it to be 2.4 gallons. Farid knows that 1 gallon is equal to 4.54 litres. Which calculation should Farid use to find the quantity of fluid in litres?
    A 2.4 ÷ 4.54   B 2.4 × 4.54
    C 4.54 ÷ 2.4   D none of these

18. Of the 120 children at a preschool, 75 are boys. What is the ratio of girls to boys?
    A 8 to 5   B 5 to 8   C 5 to 3   D 3 to 5

19. The distance from Adamstown to Bennett is 2.7 km and the distance from Adamstown to Dunhill is 7.5 km. Casey is halfway between Bennett and Dunhill.

How far is Casey from Adamstown?   ☐ km

20. What is the next number in this pattern?
    1.2, −1.3, −3.8, −6.3, ☐

25

1 D **2** C **3** B **4** D **5** 5.168 **6** C **7** A **8** 1.6
9 13 °C **10** A **11** A **12** C **13** B **14** D **15** $3250
16 B **17** B **18** D **19** 5.1 km **20** −8.8

1 $77 \div 0.7 = 770 \div 7$
$= 110$

2 $18 \times 37 = 666$
$1.8 \times 0.37 = 0.666$
[There are three digits, in total, after the decimal points in the question so there must be three digits after the decimal point in the answer.]

3 [Change each option to a decimal.]
$7\% = 0.07 \quad [\frac{7}{100}]$
0.7
$\frac{1}{7} = 0.142857... \quad [1 \div 7]$
0.077
So, in order, from lowest to highest, the numbers are 0.07, 0.077, 0.142857..., 0.7.
The largest number is 0.7.

4 $\frac{13}{100} + \frac{7}{10} = \frac{13}{100} + \frac{70}{100}$
$= \frac{83}{100}$
$= 0.83$

5 $1.6 + 3.478 + 0.09 = 1.600 + 3.478 + 0.090$
$= 5.168$

$\begin{array}{r} {}^{1}{}^{1} \\ 1.600 \\ 3.478 \\ + \underline{0.090} \\ 5.168 \end{array}$

6 [The number halfway between two others is the average of the two numbers.]
$0.17 + 0.43 = 0.6$

$\begin{array}{r} {}^{1} \\ 0.17 \\ + \underline{0.43} \\ 0.60 \end{array}$

$0.6 \div 2 = 0.3$
The number halfway between 0.17 and 0.43 is 0.3.

7 $\frac{3 - 0.6}{1 + 0.2} = \frac{2.4}{1.2}$
$= \frac{24}{12}$
$= 2$

8 $10, 8.6, 7.2, 5.8, ...$
The numbers are decreasing by 1.4 each time.
The fifth number $= 5.8 - 1.4$
$= 4.4$
The sixth number $= 4.4 - 1.4$
$= 3$
The seventh number $= 3 - 1.4$
$= 1.6$

9 At midnight the temperature was 21 degrees below zero.
At 8 am the temperature was 8 degrees below zero.
Difference $= 21 - 8$
$= 13$
The temperature had risen 13 degrees.

10 The ratio of men to women was 5 to 4 so 5 out of every 9 people were men.
Now $72 \div 9 = 8$
So there were 8 lots of 9 people.
Number of men $= 5 \times 8$
$= 40$
Number of women $= 4 \times 8$
$= 32$
Now 5 men and 12 women leave.
New number of men $= 40 - 5$
$= 35$
New number of women $= 32 - 12$
$= 20$
New ratio of men to women $= 35$ to 20
$= 7$ to 4

11 $0.02 \div 0.8 = 0.2 \div 8$

$\qquad = 0.025$

$$8)\overline{0.2^20^40} \\ \quad 0.0\ 2\ 5$$

12 Consider each option:

$0.15 + 0.45 = 0.6$

$$\overset{1}{}0.15 \\ +\ 0.45 \\ \overline{0.60}$$

$1 - 0.4 = 0.6$

$$\overset{0}{\cancel{1}}.\overset{1}{0} \\ -\ 0.\ 4 \\ \overline{\ 0.\ 6}$$

$0.3 \times 0.2 = 0.06$

[There are a total of 2 digits after the decimal point in the question so there must be 2 digits after the decimal point in the answer.]

$0.12 \div 0.2 = 1.2 \div 2$

$\qquad = 0.6$

The expression that does not equal 0.6 is 0.3×0.2.

13 Consider each option:
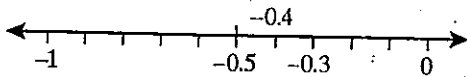
$0.2 < 0.05$?

$0.2 = 0.20$

So $0.20 > 0.05$

This option is not correct.

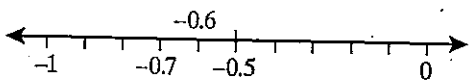$-0.3 > -0.4$?

This option is correct.

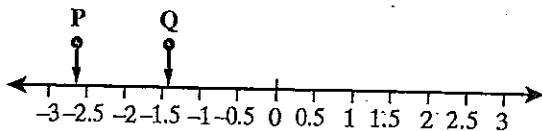$-0.6 < -0.7$?

$-0.6 > -0.7$

This option is not correct.

$-0.18 > -0.153$?

$-0.180 < -0.153$

This option is not correct.

The correct option is $-0.3 > -0.4$.

14

P is between -2.5 and -3.

It is closer to -2.5. P could be -2.6.

Q is between -1 and -1.5.

It is closer to -1.5. Q could be -1.4.

So P could be -2.6 and Q could be -1.4.

15 Difference $= \$2500 - (-\$750)$

$\qquad\qquad = \$2500 + \$750$

$\qquad\qquad = \$3250$

16 Charlie has 44 chooks.

Before, Charlie had $(44 - 12)$ chooks or 32 chooks.

The ratio of chooks to ducks was 8 to 3.

So for every 8 chooks, Charlie had 3 ducks.

Now $32 \div 8 = 4$

So Charlie had 4 lots of 8 chooks. He must have also had 4 lots of 3 ducks.

Number of ducks $= 4 \times 3$

$\qquad\qquad\qquad = 12$

New ratio of chooks to ducks $= 44$ to 12

$\qquad\qquad\qquad\qquad\qquad = 11$ to 3

17 Each gallon $= 4.54$ litres

So 2.4 gallons $= 2.4 \times 4.54$ litres

The correct calculation is 2.4×4.54.

18 Number of children $= 120$

Number of boys $= 75$

Number of girls $= 120 - 75$

$\qquad\qquad\qquad = 45$

Ratio of girls to boys $= 45$ to 75

$\qquad\qquad\qquad\qquad = 9$ to 15

$\qquad\qquad\qquad\qquad = 3$ to 5
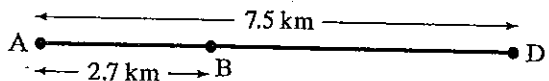
19 Distance from Bennett to Dunhill

$\qquad = (7.5 - 2.7)$ km

$\qquad = 4.8$ km

Half of this distance is 2.4 km.

So Casey is 2.4 km from Bennett.

Distance from Adamstown $= (2.7 + 2.4)$ km

$\qquad\qquad\qquad\qquad\qquad = 5.1$ km

20 $1.2, -1.3, -3.8, -6.3, \ldots$

The numbers in the sequence are decreasing by 2.5 each time.

The next number $= -6.3 - 2.5$

$\qquad\qquad\qquad\quad = -8.8$