PRACTICE QUESTIONS
Here are some practice examples to show you what the questions on the real test are like.

Practice Example 1

\[5 + 2 =\]

A: 5  B: 6  C: 7  D: 8  E: None of these

Practice Example 2

Which is the largest number?

A: 403  B: 4600  C: 406  D: 4060  E: None of these

Practice Example 3

\[4879\]

What value does the circled number in the number above represent?

A: 4879  B: 700  C: 70  D: 7  E: None of these

You will have **30 minutes** to do as many questions as you can.

NO CALCULATORS PERMITTED FOR THIS TEST.

PLEASE DO NOT TURN THIS PAGE UNTIL YOU ARE ASKED TO DO SO.
Question 1

\(-10 + 3 - 4 + 5\)

A: 2  B: -12  C: -4  D: 16  E: None of these

Question 2

\(-96 \div -6 \div 8 =\)

A: 2  B: 12  C: -12  D: -2  E: None of these

Question 3

Jo bought a used car for $6000 and paid 15\% deposit. How much did he still have to pay?

A: $900  B: $5000  C: $4500  D: $5100  E: None of these

Question 4

\(5 \times -2 - (8 - 12) + 16 \div -8 =\)

A: 6  B: -8  C: -16  D: -6  E: None of these

Question 5

What is 8\% of $600?

A: $580  B: $480  C: $48  D: $58  E: None of these

Question 6

Which is the longest distance?

A: 3500cm  B: 65.5m  C: 75000mm  D: 15.5m  E: 0.1km
Question 7

The perimeter of the shape is

\[
\begin{array}{c}
\text{12cm} \\
\text{25cm} \\
\text{10cm}
\end{array}
\]

A: 47cm \hspace{1cm} B: 72cm \hspace{1cm} C: 69cm \hspace{1cm} D: 94cm \hspace{1cm} E: Not enough information to find perimeter

Question 8

If the length of the shorter arc $\overline{AB}$ is 22cm and C is the centre of the circle then the circumference of the circle is:

\[
\begin{array}{c}
A: 990cm \\
B: 67cm \\
C: 176cm \\
D: 88cm \\
E: None of these
\end{array}
\]

Question 9

If 2 fligs make a flog and 3 flogs make a flug, how many fligs in 12 flugs?

A: 72 \hspace{1cm} B: 17 \hspace{1cm} C: 36 \hspace{1cm} D: 34 \hspace{1cm} E: None of these
Question 10
If \(2^{\frac{1}{3}} : 4^{\frac{1}{3}}\) then \(7: \square \square =\)

A: 12  B: 13  C: \(8^{\frac{2}{3}}\)  D: \(6^{\frac{1}{3}}\)  E: None of these

Question 11
Concrete is made by mixing screenings cement and sand in the ratio 3:1:15. How much sand would be needed to make 125 tonnes of concrete?

A: 27 tonnes  B: 33.75 tonnes  C: 45 tonnes  D: 75 tonnes  E: None of these

Question 12
\[\begin{align*}
a° &= \quad 127° \\
87° &\quad a° =
\end{align*}\]

A: 53  B: 40  C: 93  D: 146  E: None of these

Question 13
\[\begin{align*}
x° &= \\
56° &\quad x°
\end{align*}\]

A: 124  B: 304  C: 54  D: 66  E: None of these
Use the following graph to answer questions 14 and 15

The graph shows the number of hours a year 8 group spent doing homework for one week.

**Question 14**
How many students studied for more than 8 hours in the week?

A: 22  B: 29  C: 42  D: 50  E: None of these

**Question 15**
How many students studied for 6 hours or less per week?

A: 9  B: 18  C: 15  D: 12  E: None of these

**Question 16**
Two six sided dice are thrown together. What is the probability that a total of 10 is thrown?

A: $\frac{1}{6}$  B: $\frac{1}{12}$  C: $\frac{1}{2}$  D: $\frac{5}{6}$  E: None of these

**Question 17**
The gradient of the line is

A: $\frac{3}{2}$  B: $\frac{2}{3}$  C: $-\frac{2}{3}$  D: $-\frac{3}{2}$  E: None of these
Question 18
The y intercept of the graph could only be:

A: (4,0)  B: (0,−3)  C: (−4,0)  D: (−3,0)  E: (0,3)

Question 19
Which inequation shows the following statement?

x is 6 or less and more than −5

A: −5 < x ≤ 6  B: −5 > x ≤ 6  C: −5 ≤ x ≤ 6  D: −5 < x < 6  E: −5 ≤ x < 6

Question 20
Expand and simplify −6 (2x − 3) − 11

A: −12x − 29  B: 7 − 12x  C: 12x − 7  D: 7 + 12x  E: None of these
**Question 21**

Which option would make this solid?

![Diagram](image)

A:  
B:  
C:  
D:  
E: None of the nets would make the solid

**Question 22**

The diagram shows a small rectangular field. If Linda runs from A to B to D to C to A, how far does she run?

![Diagram](image)

A: 120m  
B: 160m  
C: 140m  
D: 150m  
E: None of these
**Question 23**

Simplify the surd $3\sqrt{56}$ completely

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>$12\sqrt{14}$</td>
<td>$5\sqrt{14}$</td>
<td>$6\sqrt{14}$</td>
<td>$6\sqrt{28}$</td>
<td>None of these</td>
</tr>
</tbody>
</table>

**Question 24**

The length of $x$ equals

A: 6cm  
B: $\sqrt{6}cm$  
C: $5\sqrt{2}cm$  
D: $2\sqrt{5}cm$  
E: None of these

**Question 25**

The rectangle box has dimensions as shown. What is the length $\overline{AG}$?

A: $2\sqrt{26}$  
B: $4\sqrt{6}$  
C: $2\sqrt{3}$  
D: $\sqrt{16}$  
E: None of these

**Question 26**

Sam bought a car valued at $7700. One year later the car’s value had decreased by $\frac{2}{7}$. What is the new value of the car?

A: $2200$  
B: $5500$  
C: $9900$  
D: $4400$  
E: None of these
Question 27
If Density = Mass ÷ Volume, what is the Mass of the solid in the diagram if its Density is 1.2gm / cm³?

\[
\text{Density} = \frac{\text{Mass}}{\text{Volume}}
\]

A: 50gm  
B: 60gm  
C: 72gm  
D: 38.4gm  
E: None of these

Question 28
What is the speed in m/s of a car that travels 30km in 20 minutes?

A: 1500 m/s  
B: 150 m/s  
C: 90 m/s  
D: 540 m/s  
E: None of these

Question 29
If \( R = \frac{(S + T)P}{3} \) then \( T \) equals

A: \( \frac{3R - S}{P} \)  
B: \( \frac{PR}{3} - S \)  
C: \( \frac{3R}{P} + S \)  
D: \( \frac{3R + S}{P} \)  
E: \( \frac{3R}{P} - S \)

Question 30
Solve the inequation for \( x \)

\[
\frac{5(9 - x)}{3} + 1 < 11
\]

A: \( x < 3 \)  
B: \( x > 3 \)  
C: \( x > -3 \)  
D: \( x > \frac{14}{5} \)  
E: None of these

Question 31
Solve for \( x \)

\[
\frac{4x - 3}{5} - \frac{2x - 3}{2} = -2
\]

A: \( x = 1 \frac{11}{18} \)  
B: \( x = 5 \frac{1}{2} \)  
C: \( x = -5 \frac{1}{2} \)  
D: \( x = 14 \frac{1}{2} \)  
E: \( x = -14 \frac{1}{2} \)
**Question 32**
Which equation could only be the equation of the graph?

A: \( y = 3x + 2 \)

B: \( y = -3x - 2 \)

C: \( y = 3x - 2 \)

D: \( y = -3 + 2 \)

E: \( y = -x - 2 \)

**Question 33**
Which set of coordinates lie outside the shaded area?

A: \((0,0)\)

B: \((-1,-6)\)

C: \((1,-50)\)

D: \((1,1)\)

E: \((4,1)\)

**Question 34**
The equation of this graph is:

A: \( y = -\frac{6x}{5} + 4 \)

B: \( y = \frac{5x}{6} + 4 \)

C: \( y = 5x + 4 \)

D: \( y = -\frac{5x}{6} + 4 \)

E: \( y = -\frac{5x}{6} - 4 \)
**Question 35**

The coordinates of the point of intersection for the two graphs could only be:

A: \((-1, 2)\)

B: \((-1, -2)\)

C: \((1, 2)\)

D: \((1, -2)\)

E: \((2, -1)\)

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**Question 36**

\(-(-3)^3 =

A: -9

B: 27

C: 9

D: -27

E: None of these

---

**Question 37**

\[
\frac{10x^2 \times 8y^3}{4y \times 5x} =
\]

A: \(4x^2y\)

B: \(\frac{2y}{x}\)

C: \(\frac{2xy^5}{xy}\)

D: \(4xy^2\)

E: None of these

---

**Question 38**

\((3^0y)^3 \times 2(xy)^0 =

A: 18y^2

B: 36xy^3

C: 2y^2

D: 6xy^2

E: None of these

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**Question 39**

\[
\frac{3x^{-2}y^{-2}}{6y^{-1}x^3} =
\]

A: \(\frac{y^3}{2x^5}\)

B: \(\frac{y}{2x}\)

C: \(\frac{y}{3x}\)

D: \(\frac{3y}{x^5}\)

E: \(\frac{2y^3}{x}\)

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**Question 40**

Which is not the same as \(32^{3/5}\)?

A: \((32^{1/5})\)

B: \((32^{3})^{1/5}\)

C: \((\sqrt[3]{32})^3\)

D: \((32^{1/3})^3\)

E: \(\sqrt[5]{32^3}\)
Use the Venn diagram to answer questions 41, 42 and 43

The diagram shows a class of music students and instruments they learn.

S = Saxophone
F = Flute

Question 41
What is the total number of students in the class?

A: 33  B: 22  C: 17  D: 23  E: 28

Question 42
How many students learnt neither saxophone nor flute?

A: 5  B: 6  C: 7  D: 10  E: None of these

Question 43
How many students learnt just the saxophone or the flute?

A: 12  B: 22  C: 17  D: 15  E: None of these

Question 44
Which is the best cumulative frequency graph for the histogram?

Question 45
Jack’s Dad invested some money and for every $12 he invested he got a total of $15 back. If Jack’s Dad invested $300, how much in total did he get back?

A: $225  B: $525  C: $480  D: $375  E: None of these
Question 46
Expand the brackets and simplify
$$(2\sqrt{5} - \sqrt{2})^2$$

A: $4\sqrt{5} + 2\sqrt{2}$  
B: $12 - 4\sqrt{10}$  
C: $8 - 4\sqrt{10}$  
D: $2\sqrt{10} - 2$  
E: None of these

Question 47
Rationalise and simplify \(\frac{4\sqrt{5}}{\sqrt{3}}\)

A: $\sqrt{2}$  
B: $3\sqrt{6}$  
C: $\sqrt{6}$  
D: $\frac{\sqrt{6}}{3}$  
E: None of these

Question 48
If \(x = \frac{1}{2}, \ y = \frac{2}{3}\) and \(z = \frac{3}{4}\) evaluate \(x + y + z\)

A: $1\frac{1}{2}$  
B: $\frac{3}{7}$  
C: $1\frac{1}{12}$  
D: $\frac{3}{4}$  
E: None of these

Question 49
Expand and simplify \((3a - 5b)(3a + 5b)\)

A: $9a - 25b$  
B: $9a + 25b$  
C: $9a^2 + 25b^2$  
D: $9a^2 - 25b^2$  
E: None of these

Question 50
Factorise and simplify \(3a^2 + 3a - 18\)

A: $(a + 3)(a - 2)$  
B: $3(a - 3)(a + 2)$  
C: $3(a - 3)(a - 2)$  
D: $3(a + 3)(a - 2)$  
E: None of these

Question 51
Simplify \(\frac{x^2 - 9}{4x - 12} + \frac{x + 3}{2}\)

A: $\frac{x + 3}{4}$  
B: $\frac{1}{2}$  
C: $\frac{x + 3}{2(x - 3)}$  
D: $\frac{2}{1}$  
E: None of these
Question 52
The correct ratio to find $x$ is:

$\begin{align*}
\text{A: } & 6 \cos 72^\circ \\
\text{B: } & 6 \tan 72^\circ \\
\text{C: } & 15 \sin 18^\circ \\
\text{D: } & 15 \sin 72^\circ \\
\text{E: } & 15 \cos 18^\circ 
\end{align*}$

Question 53
The turning point of the graph could only be:

$\begin{align*}
\text{A: } & (-3, 3) \\
\text{B: } & (4, -2) \\
\text{C: } & (3, 4) \\
\text{D: } & (-2, 3) \\
\text{E: } & (-3, -2) 
\end{align*}$

Question 54
A number $x$ is subtracted from two times its square and the result is 45. An equation to find the value of $x$ would be:

$\begin{align*}
\text{A: } & x^2 - 2x = 45 \\
\text{B: } & 2x - x^2 = 45 \\
\text{C: } & 2x^2 - x = 45 \\
\text{D: } & 2x^2 - 2x = 45 \\
\text{E: } & x - 2x^2 = 45 
\end{align*}$

Question 55
Find the points of intersection of the graphs of $y = x^2$ and $y = 3x - 2$.

$\begin{align*}
\text{A: } & (1, 1)(1, 4) \\
\text{B: } & (2, 4)(1, 1) \\
\text{C: } & (1, -1)(2, 4) \\
\text{D: } & (-2, 4)(1, 1) \\
\text{E: } & \text{None of these} 
\end{align*}$
Use the graph to answer questions 56, 57 & 58

The graph shows the price paid and weight for bags of sugar bought at different shops.

Question 56
Which shop gave the worst value for money?

A: Shop z  B: Shop y  C: Shop x  D: Shop w  E: Shop v

Question 57
Which two shops charged the same price per kilogram?

A: Shops z & x  B: Shops z & v  C: Shops y & z  D: Shops v & w  E: Shops x & y

Question 58
At which shop would you get three times the amount of sugar for the same price as shop z?

A: Shop v  B: Shop x  C: Shop w  D: Shop y  E: None of these
Question 59

A: 4  B: 5  C: 6  D: 3  E: None of these

Question 60

Factorise $ab + b^2 - ac - bc$

A: $(b - c)(a - c)$  B: $(b + a)(b + c)$  C: $(b - c)(a + b)$  D: $(b + c)(a - b)$  E: $(b - c)(a + c)$

WELL DONE. THIS IS THE END OF THE TEST.

IF YOU STILL HAVE TIME LEFT, PLEASE CHECK OVER YOUR ANSWERS.