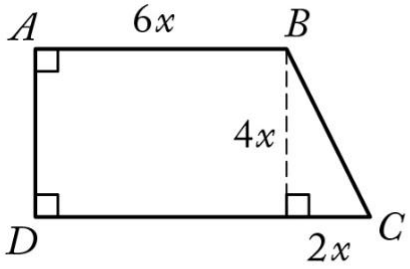
SSAT 数学硬骨头 答案

UL Quantitative Section Test - 4

$$\frac{14{,}998{,}798 + 2{,}997{,}892}{897{,}849}$$

Which of the following is the best estimate of the expression above?

A	$\frac{1}{50}$
B	$\frac{1}{5}$
C	2
D	20 ✓
E	200 ✗



What is the area of the trapezoid shown above?

A	$16x^2$ ✗
B	$28x^2$ ✓
C	$32x^2$
D	$48x^2$
E	$56x^2$

The function f is defined by $f(x) = 2x^4 + x^3$. What is the value of $f(-1)$?

A	-3	
B	-2	
C	0	×
D	1	✓
E	3	

What is the solution to $4\sqrt{16x} = 32$?

A	$x = \frac{1}{2}$	
B	$x = 1$	
C	$x = \sqrt{2}$	×
D	$x = 2$	
E	$x = 4$	✓

Which of the following is a rotation of the figure above?

A		
B		✓
C		
D		×
E		

$5^{18} + 5^{18} + 5^{18} + 5^{18} + 5^{18}$

A	5^{18}	
B	5^{19}	✓
C	5^{90}	
D	25^{18}	
E	25^{90}	×

In the xy-coordinate plane, what is the slope of a line that is perpendicular to $3x - 4y = 7$?

A	$-\frac{4}{3}$	✓
B	$-\frac{3}{4}$	
C	$\frac{3}{4}$	×
D	$\frac{4}{3}$	
E	$\frac{4}{7}$	

Which of the following expressions is equivalent to $x^4 - 16$?

A	$4(x-2)$
B	$(x-2)^4$
C	$(x-4)^2(x+4)^2$
D	$(x-2)(x+2)(x^2+4)$
E	$(x+2)(x+2)(x-2)(x-2)$

UL Quantitative Section Test - 3

In the xy-coordinate plane, if the point $(-3, 5)$ is shifted 4 units to the right and 3 units down, what will be the new coordinates of the point?

A	(−7, 8)	
B	(−7, 2)	
C	(−6, 9)	×
D	(1, 2)	✓
E	(1, 8)	

Approximate Distances

Earth to the moon	385×10^3 km
Earth to Mars	294×10^6 km

Based on the table above, the distance from Earth to Mars is approximately how many times the distance from Earth to the moon?

A	500	
B	670	
C	750	✓
D	1,000	
E	1,300	×

Simplify: $(j^{-1}\,k\,m^{-2})^{-1}$

A	$\frac{km^2}{j}$	
B	$\frac{jm^2}{k}$	✓
C	$\frac{k}{jm^2}$	
D	$\frac{jk}{m^2}$	
E	$\frac{m^2}{jk}$	

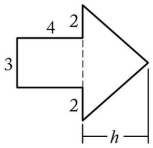
Which of the following is equivalent to $\frac{x-2}{4} - \left(x - \frac{3}{4}\right)$?

A	$\frac{1}{4}$	
B	$-\frac{1}{4}$	
C	$\frac{3x-5}{4}$	
D	$\frac{-3x-5}{4}$	
E	$\frac{-3x+1}{4}$	✓

$$x^2 - 16 = -6x$$

What are all values of x that make the equation above true?

A	−8, 2	✓
B	−4, 4	
C	−2, 8	
D	0, 16	
E	6, 16	



The figure shown is composed of a rectangle and a triangle. If the figure has an area of 26 square units, what is the length, in units, of h?

A	2	
B	4	✓
C	6	
D	7	
E	13	

8 bits = 1 byte
2^{10} bytes = 1 kilobyte
2^{7} kilobytes = 1 megabit

Computer data storage is measured in bits and bytes, which are related by the conversions shown above. Based on these conversions, how many bits are equivalent to 1 megabit?

A	2^6	
B	2^{13}	
C	2^{14}	
D	2^{17}	✗
E	2^{20}	✓

A cone has a height that is twice its radius and a volume of 18π in^3. What is the cone's height, in inches? $\left(V = \frac{1}{3}\pi r^2 h\right)$

A	3	
B	6	✓
C	18	
D	$\sqrt[3]{108}$	
E	$2\sqrt[3]{108}$	

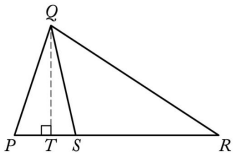
Let the function f be defined by $f(x) = x^2 + 2x - 5$. Which of the following is equivalent to $f(a+1)$?

A	$a^2 + 2a - 2$	
B	$a^2 + 2a - 3$	
C	$a^2 + 3a - 2$	
D	$a^2 + 4a - 2$	✓
E	$a^2 + 4a - 3$	

UL Quantitative Section Test - 1

Which of the following is equivalent to $\sqrt{\frac{25}{16}}$?

A	$\sqrt{\frac{5}{4}}$	×
B	$\frac{5}{4}$	✓
C	$\frac{5}{16}$	
D	$\frac{25}{32}$	
E	$\frac{625}{256}$	



Triangle PQR shown contains triangles PQS and SQR. The area of triangle PQR is 60 square units, the area of triangle SQR is 42 square units, and the length of segment $\overline{QT}$ is 8 units. What is the length, in units, of segment $\overline{PS}$?

A	15	
B	10	
C	9	
D	$\frac{21}{2}$	
E	$\frac{9}{2}$	✓

Which of the following is the least common multiple of 8, 28, and 35 ?

A	140	×
B	210	
C	280	✓
D	560	
E	1,960	

What are all the values of x that satisfy the equation $3x^2 - 10x - 8 = 0$?

A	$4, -\frac{2}{3}$ ✓
B	$2, -\frac{4}{3}$
C	$-1, \frac{8}{3}$
D	$-4, \frac{2}{3}$
E	$-8, \frac{1}{3}$

In the xy-coordinate plane, a line with a slope of 2 passes through the points $(k, 3)$ and $(6, k)$. What is the value of k ?

A	0
B	2
C	3
D	5 ✓
E	9

$A = \{2, 3, 5, 7, 11, 13\}$
$B = \{1, 2, 4, 6, 10, 16\}$

For sets A and B above, let a represent any member of set A and let b represent any member of set B. What is the maximum possible value of $|a - b|$?

A	18
B	15
C	14 ✓
D	12 ✗
E	11

What is the solution to the equation $3^x = 27^2$?

A	$x = 8$
B	$x = 6$ ✓
C	$x = 5$
D	$x = 3$
E	$x = 2$

A square has an area of x square units and a perimeter of y units. If $x = 2y$, what is the perimeter, in units, of the square?

A	64	
B	32	✓
C	24	
D	16	
E	8	✗

UL Quantitative Section Test - 2

Sand is poured into a box at a rate of 2 ft^3 per hour. The box has a length of 2 ft, a width of 1 ft, and a height of 5 ft. What is the time, in minutes, it will take to completely fill the box?

A	3	
B	5	✗
C	12	
D	240	
E	300	✓

$$\frac{16x^3}{4x^2} = 144$$

What value of x satisfies the equation above?

A	6	
B	12	
C	24	
D	36	✓
E	72	

Erin ran 200 meters in 26 seconds. Which of the following is the best estimate for Erin's speed, in miles per hour? (Use 1 mile = 1.6 kilometers.)

A	10	
B	18	✓
C	29	✗
D	36	
E	180	

Which of the following is equivalent to $6p^2 + 18p - 60$?

A	$6(p+5)(p-2)$
B	$6(p+2)(p-5)$
C	$6(p+1)(p+10)$
D	$(3p+30)(2p-2)$
E	$(3p-4)(2p+15)$

$-3x + 4y = -2$
$12x - 16y = 8$

A system of linear equations is shown above. Which of the following is true of the graph of the system in the xy-cooridinate plane?

A	It is represented by the same line.	✓
B	It is represented by two parallel lines.	
C	It is represented by two perpendicular lines.	
D	It is represented by two lines that pass through the origin.	
E	It is represented by two lines that intersect at the point $\left(0, \frac{1}{2}\right)$.	