Specialized High Schools Admissions Test (SHSAT) - Practice Test for 2024 Admissions

امتحان القبول بالمدارس الثانوية المتخصصة (SHSAT)
امتحان تجريبي للإلحاق في عام 2024

স্পেশালাইজড্ হাই স্কুলস্ অ্যাডমিশন্স টেস্ট (SHSAT)
2024 সালের ভর্তি পরীক্ষার অনুশীলনী

特殊高中入學測驗 (SHSAT)
模擬測驗 (2024年入學)

Test d'entrée e[illegible]lycée sp[illegible] (SHSAT)
Examen blanc pour les admissions de 2024

[illegible]gzamen admisyon nan lekòl segondè espesyalize (SHSAT)
[illegible] pou admisyon 2024

특수목적 고등학교 [illegible] (SHSAT)
20[illegible]년도 [illegible]형 대비 연습의 시험

Экзамен в специализированные средние школы (SHSAT)
Тренировочный тест для поступления в среднюю школу в 2024 г.

Examen de admisión a las escuelas secundarias especializadas (SHSAT)
Examen de práctica para las admisiones de 2024

متخصص ہائی اسکول داخلہ امتحان (SHSAT)
2024 داخلوں کے لیے مشقیہ امتحان

Form A Math

Pearson NYC Public Schools

Simple Interest = Principle x rate x time

58. Ms. Li opened a retirement account with a deposit of $2,500. This account earns 4% simple interest annually. How many years will it take her to earn $500 on her $2,500 deposit?

$2500 \times \frac{4}{100} = 100$

$\frac{500}{100} = 5$

$\$100 \times 5 = \$500$

59. $6 - 9 \div |-3| + (-2)^3 \times 1\frac{1}{2}$

What is the value of the expression shown above?

$|-3| = 3$, $(-2)^3 = -8$, $1\frac{1}{2} = \frac{3}{2}$

$-8 \times \frac{3}{2} = -12$

$6 - 3 + -12 = -9$

60. Solve for x:

$7x + 3 - 2(2x + 1) = 13$

$-4x - 2$

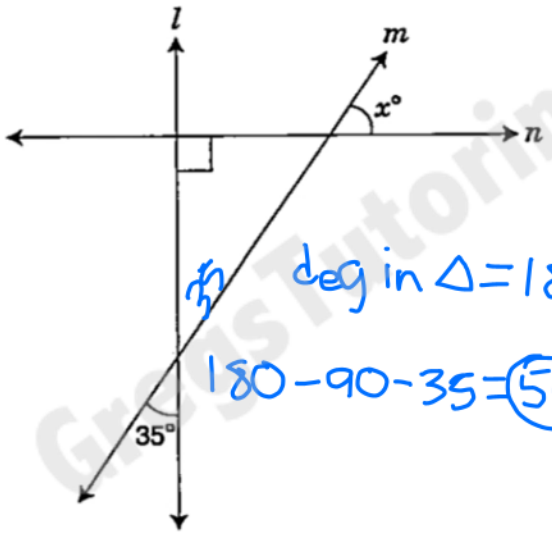
$3x + 1 = 13$

$-1 \quad -1$

$\frac{3x}{3} = \frac{12}{3}$

$x = 4$

61.



deg in Δ = 180

180 − 90 − 35 = 55

In the figure above, line *l* is perpendicular to line *n*. What is the value of *x*?

62. The mean value of 8 numbers is 17. Three of these numbers (9, 11, and 20) are discarded. What is the mean of the 5 remaining numbers?

average ##

$$\text{Avg} = \frac{\text{Sum \#s}}{\text{\#\#s}}$$

$$8 = \frac{\text{sum}}{17}$$

$$\text{sum} = 8 \times 17 = 80 + 56 = 136$$

$$9 + 11 + 20 = 40$$

3 numbers

$$136 - 40 = 96$$

8 numbers − 3 = 5

$$5\overline{)96.0} \quad 19.2$$

63. $3^4 + 7^4 =$

$81 + 49^2$

A. 40

B. 370

C. 2,482

D. 10,000

$$\begin{array}{r} {}^{3}{}^{8}49 \\ \times\ 49 \\ \hline {}^{1}441 \\ 1960 \\ \hline 2401 \end{array} \qquad \begin{array}{r} 2401 \\ +\ \ 81 \\ \hline 2482 \end{array}$$

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65. Jamel works at a computer store. He is paid an hourly rate plus a 15% commission on all computer products he sells. Last week, Jamel was paid $802.50 for working 30 hours and selling $1,250.00 worth of computer products. What is Jamel's hourly rate?

A. $20.50/hr

B. $26.75/hr

C. $33.00/hr

D. $37.65/hr

$y = mx + b$

$p = rh + \frac{15}{100}\text{prod}$

$802.50 = 30r + \frac{15}{100}(1250)$

$802.5 - 187.5 = 615$

$615 = 30r + 187.5$

$30 \overline{)615.00}$ → 20.5

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64. In one week, $1\frac{3}{4}$ inches of rain fell on Monday, $2\frac{2}{3}$ inches fell on Tuesday, and $\frac{7}{8}$ inch fell on Wednesday. How many inches of rain fell during those three days?

E. $5\frac{7}{24}$

F. $5\frac{1}{24}$

G. $3\frac{4}{5}$

H. $3\frac{1}{2}$

$1\frac{3}{4} \to 1\frac{18}{24}$

$+2\frac{2}{3} \to 2\frac{16}{24}$

$+\frac{7}{8} \to +\frac{21}{24}$

$3\frac{55}{24}$

$\frac{55}{24} = 2\frac{7}{24}$ $\quad 3 + 2\frac{7}{24} =$

$5\frac{7}{24}$

66. A revolving sign makes 1 complete revolution every 90 minutes. If the sign starts moving at 2:30 p.m., at what time will the sign complete 8 revolutions?

E. 1:00 a.m.

F. 2:30 a.m.

G. 4:00 p.m.

H. 12:00 midnight

$\frac{1\text{ rev}}{90\text{ min}} = \frac{1\text{ rev}}{1.5\text{ hrs}}$

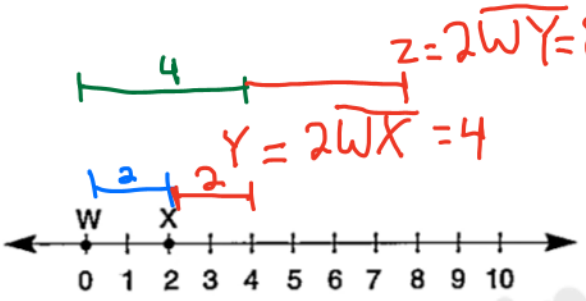
$\frac{1\text{ rev}}{1.5\text{ hrs}} = \frac{8\text{ rev}}{x\text{ hrs}}$

$x = 8 \times 1.5$

$= 12$

2:30 PM + 12 hrs = 2:30 AM

67.



Points Y and Z are not shown on the number line above. If X is the midpoint of $\overline{WY}$, and Y is the midpoint of $\overline{WZ}$, where on the number line would point Z be located?

A. 2
B. 4
C. 6
D. 8

69. If n is an integer and $3n + 3$ is an even number, which expression must also represent an even number?

A. $5n + 1$
B. $4n + 5$
C. $2n + 3$
D. $n + 2$

- 4n and 2n are multiples of 2 and therefore even. That plus odd is odd. That rules out choices B and C.

- In $3n+3$ the number 3 is odd and we're told $3n+3$ is even therefore $3n$ is odd.

  Therefore n is odd.

- Odd plus even is odd. Therefore this rules out D.

- To confirm A is the answer, as n is odd, then 5n is odd. An odd plus 1 (which is odd) is even

68. $\frac{81}{10} = \frac{9}{n}$

What value of n makes the equation above true?

E. 1

F. $1\frac{1}{9}$

G. 5

H. $10\frac{1}{9}$

use cross product

$81n = 9 \times 10 = 90$

$\frac{81n}{81} = \frac{90}{81} = \frac{10}{9} = 1\frac{1}{9}$

70. The product of two positive integers is 65. Which number could be the sum of the two integers?

E. 5

F. 18

G. 24

H. 52

factor pairs of 65

$1 + 65 = 66$

$5 + 13 = 18$

71. If n is an odd integer that is less than -3.25, what is the **greatest** possible value of n?

A. -1

B. -2

C. -3

D. -5

-5 is odd and the largest odd number less than -3.25

-4 is even so no good

---

73. Between which two consecutive integers is the fraction $\frac{29}{7}$?

A. 2 and 3

B. 3 and 4

C. 4 and 5

D. 5 and 6

$\frac{29}{7} = 4\frac{1}{7}$

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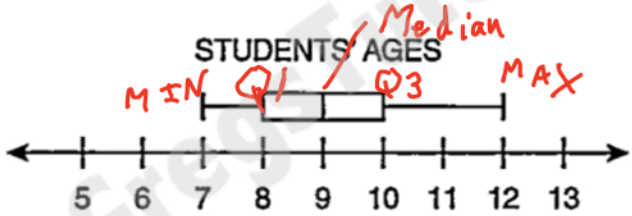
72. A swim instructor used the box plot below to display the distribution of the ages of students who signed up for swim lessons.



median (9) is not average (AKA mean)

Which statement about the distribution of ages is true?

E. The data contain an outlier. none shown

F. Approximately half the students are exactly 9 years old. plot does not show that

G. Approximately one-fourth of the students are at least 10 years old. Q_3

H. The interquartile range is 3 greater than the range of the data.

$IQR = Q_3 - Q_1 = 10 - 8 = 2$

$max - min = 12 - 7 = 5$

The difference between 5 and 2 is 3 but the IQR is 3 less not greater

74. A customer wants to buy a pair of hiking boots.

- The original price of the boots is $85.75.
- The store is offering a 15% discount on all boot purchases. $1 - .15 = .85$ $85.75 \times .85 = 72.8875$ rounds to 72.89
- The customer has a coupon for an additional 25% off the sale price. $1 - .25 = .75$
- The tax rate is 8.5%. $72.89 \times .75 = 54.6675$ rounds to 54.67 $100\% + 8.5\% = 108.5\%$

What is the final cost of the boots, including the tax, to the nearest cent?

E. $55.82

F. $59.08

G. $59.32

H. $63.17

$54.67 \times 1.085 = 59.31695$ rounds up

$108.5\% = \frac{108.5}{100} = 1.085$

75. Sheila is saving money for her summer vacation. She starts the summer with a balance of $90.00 and plans to save 15% of her earnings each week. She earns the same amount each week. After 12 weeks, Sheila has saved a total of $472.59. How much money does Sheila earn each week?

A. $212.55
B. $262.55
C. $302.55
D. $312.55

472.59
− 90.00
382.59 12 weeks savings
382.59 ÷ 12 = 31.8825
31.8825 = $\frac{15}{100}$ earnings
earnings = $31.8825 \times \frac{100}{15} = 212.55$

77. $$\frac{3^2 + (-8)^2 + 2^2}{(3 - 8 + 2)^2} =$$

A. −60
B. $-\frac{17}{3}$
C. $\frac{77}{9}$
D. 68

$\frac{9+64+4}{(-3)^2} = \frac{77}{9}$

76. $x:35 = 20:28$

For what value of x is the proportion shown above true?

E. 27
F. 25
G. 16
H. 13

$\frac{x}{35} = \frac{20}{28} = \frac{5}{7}$

$\frac{x}{35} = \frac{5}{7}$

$7x = 35 \times 5$

$\frac{7x}{7} = \frac{175}{7} = 25$

78. A soccer coach purchased 15 pairs of cleats for team members and spent a total of $805.95, including tax. If the tax rate is 8%, what is the the price of each pair of cleats before tax?

E. $49.43
F. $49.75
G. $53.73
H. $58.03

$100\% + 8\% = 108\%$

$108\% = \frac{108}{100}$

Let's reverse tax first

$\frac{108}{100}X = 805.95$

$X = 805.95 \times \frac{100}{108} =$

$= 746.25$

$746.25 \div 15 =$

15 pairs

$= 49.75$

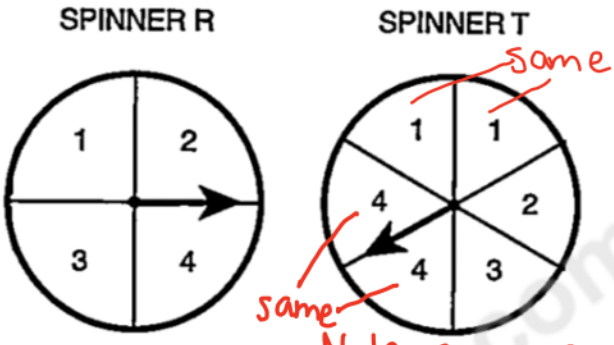
79. The numbers m, n, p, and q are different, and each is equal to one of the numbers 1, 2, 3, 6, or 12. If $2m = 6q = \frac{1}{2}n = p$, what is the value of p?

A. 2
B. 3
C. 6
D. 12

Given $cv = r$ then if r remains unchanged then if c increases v decreases. Therefore the greatest coefficient (c) may be paired with the lowest value (v), and the smallest coefficient may be paired with the largest value.

It follows then that we should ~~try~~ the largest of the choices provided in the question with n because it is paired with $\frac{1}{2}$. Therefore $\frac{1}{2} \times (12) = p$, so $p = 6$.
Therefore $m = 3$ and $q = 1$
Choice 2 is not used

81. A student uses Spinner R and Spinner T to generate a list of two-digit numbers.



R range $\{1, 2, 3, 4\}$ Note: T's range is THE SAME as R's

Spinner R determines the digit in the tens place, and Spinner T determines the digit in the ones place. What is the probability that the two-digit number determined by spinning each spinner one time is a prime number?

A. $\frac{3}{8}$
B. $\frac{5}{12}$

Spinner range as 2 digits $\{11, \ldots, 44\}$
primes possible in the range of the spinners:
11, 13, ~~17~~, ~~19~~, 23, ~~29~~,
31, ~~37~~, 41, 43
crossed out numbers are not possible with spinners R & T
So there are 6 two-digit prime numbers possible using R & T

$P_{\text{any-digit-from-R}} = \frac{1}{4}$
$P_{\text{any-unique-digit-from-T}} = \frac{1}{4}$
$P_{\text{any-two-digit-number}} = \frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$

$P_{\text{prime}} = \frac{6}{16} = \frac{3}{8}$

greater than 0.005

80. {0.1, 0.01, 0.001, 0.0001, 0.00001}

less than 0.005

If a person chooses a number at random from the set above, what is the probability that the number is less than 0.005?

$P = \frac{\#\text{ less than}}{\#\text{ total}} = \frac{3}{5}$

E. $\frac{1}{5}$

F. $\frac{2}{5}$

G. $\frac{3}{5}$

H. $\frac{2}{3}$

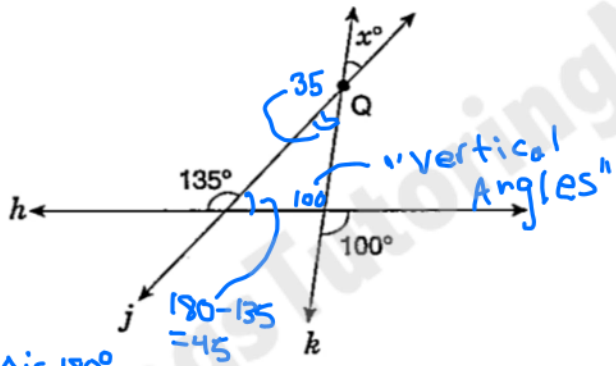
A. $\frac{3}{8}$

B. $\frac{5}{12}$

C. $\frac{3}{5}$

D. $\frac{5}{8}$

82.



"vertical Angles"

180−135 =45

Δ is 180°

180−45−100=35

Lines j and k intersect at point Q, and h is a straight line. What is the value of x?

E. 55
F. 45
G. 35
H. 30

84. A basket contains red balls, green balls, and white balls. There are 12 red balls in the basket. The probability of randomly choosing a red ball is 1 in 3. If the probability of randomly choosing a green ball is 1 in 4, how many green balls are in the basket?

E. 3
F. 8
G. 9
H. 16

red = $\frac{1}{3}$ total balls

12 = $\frac{1}{3}$ total balls

36 = total balls

12r (36−12−9=15 white)

9g $P_{green} = \frac{1}{4} \times 36 = 9$

+? w

36 total

83. Which statement **must** be true if x is a whole number greater than or equal to 1?

lets make it 1

A. $\frac{1}{x+1} > \frac{1}{x+2}$ $\frac{1}{2} > \frac{1}{3}$ ✓

B. $\frac{1}{x+1} < \frac{1}{x+2}$ $\frac{1}{2} < \frac{1}{3}$ X

C. $\frac{1}{x+1} - \frac{1}{x+2} > 1$ $\frac{1}{2} - \frac{1}{3} > 1$ X

D. $\frac{1}{x+1} - \frac{1}{x+2} > \frac{1}{x}$ $\frac{1}{2} - \frac{1}{3} > \frac{1}{1}$ X

$\frac{1}{1}$ is 1

85. It took Lars 2 hours to ride his bicycle 48 kilometers. What was his average speed in **miles per hour**? (Use the approximation 1 mile = 1.6 kilometers.)

A. 1.5

B. 15.0 $\frac{2\text{hr}}{48\text{km}} = \frac{1\text{h}}{24\text{km}}$

C. 30.0

D. 38.4

we need to invert this

$\frac{24\text{km}}{1\text{hr}} \times \frac{1\text{mile}}{1.6\text{km}} = \frac{24\text{miles}}{1.6\text{hrs}}$

$\frac{24}{1.6} = \frac{240}{16} = 15$

86. Integer x is evenly divisible by 3. Which expression below is also evenly divisible by 3?

all divisible by 3

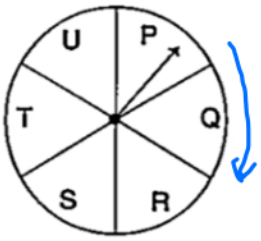
E. $2x + 1$ — not divisible by 3

F. $3x - 5$

G. $4x - 1$

H. $4x + 6$ — is divisible by 3

88.



The arrow starts on Space P and moves clockwise around the circle. It moves through one space each minute. What space will the arrow point to in 100 minutes?

E. R

F. S

G. T

H. U

there are 6 spaces
100 ÷ 6 = 16 remainder 4
count 4 spaces from P that gives Q, R, S, then T

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87. Lamel has a jar containing 6 red chips, 10 blue chips, and 4 yellow chips. If he removes one chip at random, what is the probability that it will **not** be red?

A. $\frac{4}{5}$

B. $\frac{7}{10}$

C. $\frac{3}{10}$

D. $\frac{1}{5}$

6 red
10 blue
4 yellow
20 total

not red is blue and yellow

blue and yellow is 14 chips

$P_{not\ red} = \frac{14}{20} = \frac{7}{10}$

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89. Mei-Ling is one of 6 members of a committee. If 2 members of that committee are selected to go to a conference, how many of the possible pairs of members would include Mei-Ling?

A. 5

B. 6

C. 10

D. 12

There are two slots
The first slot is taken up by Mei-Ling
That only leaves 5 members for the second slot

So Mei-Ling with each respective other member comprises pairs.

Therefore $1 \times 5 = 5$

90. If $m = 5$ and $t = -1$, what is the value of $\frac{6 - 8(2 - t)}{2m + 4(3 - m)}$?

E. -9

F. -1

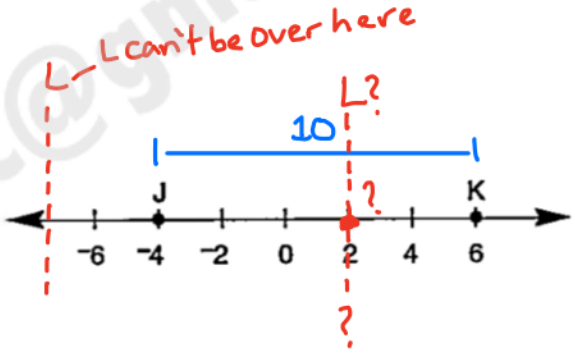
G. 1

H. 9

$\frac{6-8(2-1)}{10+4(-2)} = \frac{6-8(3)}{10-8} = \frac{6-24}{2} =$

$\frac{-18}{2} = -9$

92.



On the number line above, point L (not shown) is located on line segment JK so that $JL = \frac{2}{3}LK$. What is the position of point L?

$JK = 6 - -4 = 6 + 4 = 10$

E. -2 $JL + LK = JK$

F. 0 $JL + LK = 10$

$JL = \frac{2}{3}LK$, substitute JL

G. 2 $\frac{2}{3}LK + LK = 10$

H. 4 $1\frac{2}{3}LK = 10$

$\frac{3}{5} \cdot \frac{5}{3}LK = 10 \cdot \frac{3}{5} = 6$

if $LK = 6$ and $K = 6$

then $6 - 6 = 0$

therefore $L = 0$

91.

In the parallelogram above, what is the value of $x + y$?

A. 112
B. 124
C. 148
D. 248

The angles in a parallelogram equal 360°.

The opposite angles in a parallelogram are equal

Therefore if P is 56°, so is R

Therefore x+y must be
360−56−56=248

93. Josef and Mai divided some stamps between themselves. Josef got 60% of the stamps. If Josef received 500 more stamps than Mai, how many stamps did Josef receive?

A. 300
B. 800
C. 1,500
D. 2,500

Since Josef got 60% then Mai got 40%

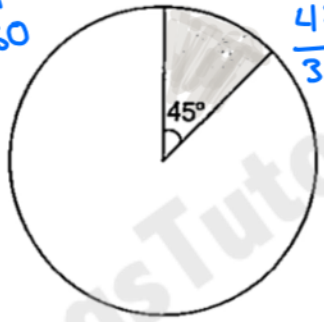
Therefore the 500 more stamps that Josef received is 60%−40%=20% of the stamps

If 500 is 20% then 2500 is 100%

Josef got 60% so
$\frac{60}{100} \times 2500 = 1500$

94.

Degrees in circle is 360



$\frac{45}{360} = \frac{1}{8}$

The shaded sector of the circle shown above has an area of 18π square feet. What is the **circumference** of the circle?

E. 144π ft

F. 24π ft

G. 18π ft

H. 9π ft

$A_{circle} = \pi r^2$

$\frac{1}{8} A_{circle} = 18\pi$

$A_{circle} = 18\pi \times 8 = 144\pi$

$\pi r^2 = 144\pi$

$r^2 = 144 \quad r = 12$

$c = 2\pi r = 24\pi$

96. A scientist mixed three chemicals, R, S, and T, in a glass container. The amount of R is 3 times the amount of S, and the amount of T is $\frac{1}{6}$ the amount of S. What is the ratio of the amount of R to the amount of T?

E. 1:18

F. 2:1

G. 3:1

H. 18:1

$R = 3S$

$T = \frac{1}{6}S$

$R:T \rightarrow \frac{R}{T}$

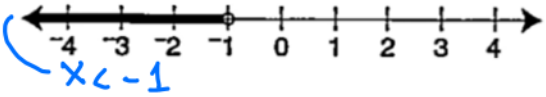
$\frac{R}{T} = \frac{3S}{\frac{1}{6}S} = \frac{3}{\frac{1}{6}}$

$3 \div \frac{1}{6} = 3 \times \frac{6}{1} = 3 \times 6 = 18$

See q#109 regarding division by a fraction

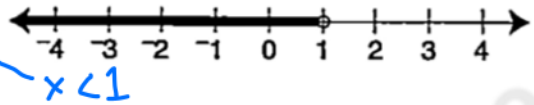
95. Which graph represents the solution to $-3x - 7 > -4$?

A.



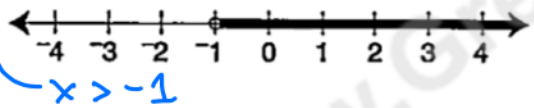
$x < -1$

B.



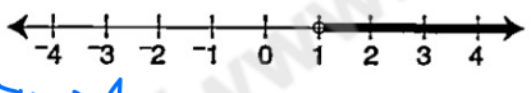
$x < 1$

C.



$x > -1$

D.



$x > 1$

when the last step involves division of a negative, we flip the sign.
So > becomes <

$-3x - 7 > -4$
$+7 \quad +7$
$-3x > 3$
$\frac{-3x}{-3} > \frac{3}{-3}$
$x < -1$

---

97. Ken has k video games, and Jeff has j video games. If Ken gives 6 video games to Jeff, Ken will have twice as many video games as Jeff. Which equation shows the relationship between k and j?

A. $k - 6 = 2(j + 6)$

B. $k - 6 = 2j + 6$

C. $2(k - 6) = j$

D. $2(k - 6) = j + 6$

Ken is k
Ken gives 6 so: $k-6$ ← this is the revised Ken
Jeff is j
Jeff gets Ken's 6 so: $j+6$ ← revised Jeff

Ken has twice Jeff
(Must use revised K and J):
$k-6 = 2(j+6)$

98. Yesterday Sarah read 15% of her entire book. Today she read another 17% of the entire book. In lowest terms, what fraction of the book is left for her to read?

15 + 17 = 32 read

100% is all pages

100 − 32 = 68 left

E. $\frac{7}{25}$

F. $\frac{3}{10}$

G. $\frac{17}{25}$ $\frac{68}{100} = \frac{17}{25}$

H. $\frac{7}{10}$

---

100. Kim jogs 8 kilometers in 1 hour 40 minutes. At that rate, how many **meters** does she jog per minute?

60 + 40 = 100 min

unit conversion? yes

E. 0.08

F. 80

G. 800

H. 8,000

8 km / 100 min

(1000 mm = 1 m)

1000 m = 1 km

$\frac{8\text{ km}}{100\text{ min}} = \frac{8000\text{ m}}{100\text{ min}} = 80$

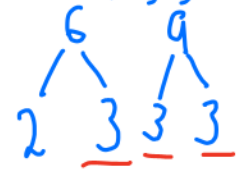
---

99. $\{1,2,3,4,5,\ldots,198,199,200\}$

How many members of the set shown above are multiples of 6 but **not** multiples of 9?

A. 11
B. 13
C. 20
D. 22

consider some multiples of 6 and 9
6: 6, 12, 18, 24, 30, 36, ...
9: 9, 18, 27, 36, ...
so LCM(6,9) = 18



$2 \times 3^2 = 18$
common factors

$6\overline{)200}$ R 33 remainder doesn't matter so there are 33 multiples of 6

$18\overline{)200}$ R 11 from above multiples of 18 help us rule out multiples of 9 that are already multiples of 6

$33 - 11 = 22$

101. For what value of x is the equation

$\frac{x}{5} - 4 = 3(4 - 2x) - 1$ true?

multiply every term by 5 ←

A. $\frac{75}{11}$

B. $\frac{75}{31}$

C. $\frac{15}{7}$

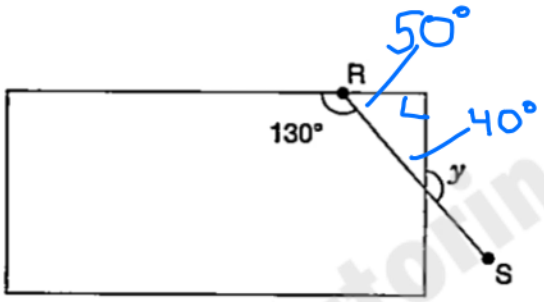
D. $\frac{65}{31}$

Solve for x, as you prefer. Here's one way:

$x - 20 = 15(4 - 2x) - 5$
$x - 20 = 60 - 30x - 5$
$+20 \quad +20$
$x = 75 - 30x$
$+30x \quad +30x$
$31x = 75$
$31 \quad 31$

$x = \frac{75}{31}$

102.



The diagram above shows line segment RS intersecting a rectangle. What is the measure of angle *y*?

E. 140°
F. 130°
G. 50°
H. 40°

50°
40°
all angles are 90°
"A line is 180°"
180 − 130 = 50
The sum of the angles of a △ = 180
180 − 50 − 90 = 40
Reapply line rule
180 − 40 = 140

103.

30 total

ESSAY LENGTH

Number of Words	Number of Essays
<100	6
100–250	4
251–500	11
>500	+ 9

Each is at least 100
24

All 150 students in Grade 8 at a school are assigned to write an essay on the same topic. A teacher records the number of words in a random sample of the essays, as shown in the table above. Based on this sample, how many students in the entire grade would be expected to write essays with **at least** 100 words?

A. 20
B. 30
C. 100
D. 120

$\frac{24}{30} \times 150 = 120$

104. Which percentage is closest in value to 0.0099?

$\frac{99}{10000} \approx \frac{100}{10000}$

E. 0%
F. 0.1%
G. 1%
H. 100%

$\frac{1}{100} = 1\%$

105. The manager of a shipping company recorded the weights, in pounds, of the last 9 packages the company shipped. The manager displayed the distribution of the weights in a box plot with the five-number summary shown below:

- minimum: 29
- first quartile: 31
- median: 42
- third quartile: 73
- maximum: 98

Which statement about the distribution of weights is supported by the box plot the manager created?

A. The minimum, 29, is an outlier. X

B. The maximum, 98, is an outlier. X

C. The interquartile range of the data is 11. no, it's 42

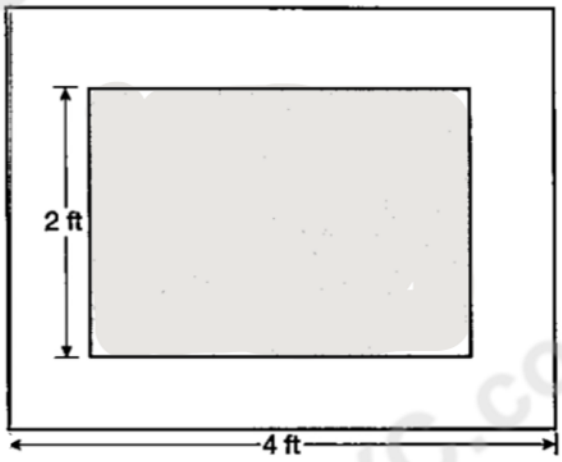
D. The interquartile range and the median are equal.

42 = 42

$IQR = Q_3 - Q_1 = 73 - 31 = 42$

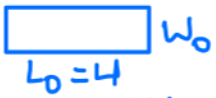
29 and 98 are the min and max therefore by definition they are not outliers

106.



respected sidelengths are proportional

In the figure above, the shaded rectangle is similar to the outer rectangle. The L_o length of the outer rectangle is 4 feet, and the perimeter of the outer rectangle is P_o 14 feet. If the width of the shaded W_s rectangle is 2 feet, what is the area of the shaded rectangle?



$\text{Perimeter}_o = 2L_o + 2W_o$

$14 = 2(4) + 2W_o = 8 + 2W_o$

$6 = 2W_o \quad W_o = 3$

$\frac{L_o}{W_o} = \frac{L_s}{W_s} \quad \frac{4}{3} = \frac{L_s}{2}$

$4(2) = 3L_s \quad L_s = \frac{8}{3}$

$A_s = L_s \times W_s$

$= \frac{8}{3} \times 2 = \frac{16}{3} = 5\frac{1}{3}$

E. $5\frac{1}{3}$ sq ft

F. 6 sq ft

G. $9\frac{1}{3}$ sq ft

H. 12 sq ft

107. A rectangular concrete driveway is 30 feet long, 8 feet wide, and 6 inches thick. What is the volume of the concrete?

A. 44 cu ft
B. 48 cu ft
C. 120 cu ft
D. 240 cu ft

unit conversion?
yes!
$30 \times 8 \times 6 = 1440$
no!
$12\text{in} = 1\text{ft}$
$6\text{in} = \frac{1}{2}\text{ft}$
$30 \times 8 \times \frac{1}{2} = 120$

---

109. Vicente and Carla each ran 8 laps around a track. They started at the same time and place. If Vicente ran 1.5 times as fast as Carla, how many laps did Carla have left to finish when Vicente finished his 8th lap?

$v = 1.5c$

A. $2\frac{1}{2}$ $8 = 1.5c$

B. $2\frac{2}{3}$ $\frac{8}{1.5} = c$

C. $3\frac{1}{3}$ $\frac{8}{\frac{3}{2}} = c$

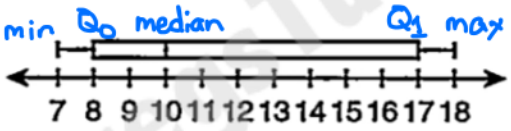
D. $5\frac{1}{3}$

$8 \div \frac{3}{2} = 8 \times \frac{3}{2} = \frac{16}{3} = 5\frac{1}{3}$

$8 - 5\frac{1}{3} = 2\frac{2}{3}$

division by a fraction is multiplication by its reciprocal
This is AKA KCF
"Keep Change Flip"

108. At a carnival, visitors can win a prize if an employee cannot correctly guess their age. The employee records the first 15 ages that he guesses one Saturday. The box plot shown below displays data about the ages he recorded.



What is the interquartile range of the box plot?

"IQR"

$IQR = Q_1 - Q_0 = 17 - 8 = 9$

E. 7

F. 9

G. 10

H. 11

110. At West College, students are randomly assigned to one of 20 dormitories and one of 6 dining rooms. Kharleen likes 6 of the dormitories and 2 of the dining rooms. What is the probability that she is assigned to both a dormitory and a dining room that she likes?

this means multiplication

E. 10%
F. 12%
G. 19%
H. 38%

likes

$\frac{6}{20} \times \frac{2}{6} = \frac{1}{10}$

total

$\frac{1}{10} = \frac{10}{100} = 10\%$

Remember

240 miles / 5 hours is the same rate as 5 hours / 240 miles

111. A train travels 2,200 miles from Phoenix to New York City. The train covers the first 240 miles in 5 hours. If the train continues to travel at this rate, how many **more** hours will it take to reach New York City? Round your answer to the nearest whole hour.

A. 46
B. 45
C. 43
D. 41

2200 − 240 = 1960 miles left

$1960 \times \frac{5\text{ hr}}{240\text{ miles}} = \frac{9800}{240}$

$240\overline{)980,00}$ → 408, −96, 200, 192

40.8 rounds to 41

112. What is the **least** of four consecutive integers whose sum is 58?

E. 1
F. 2
G. 12
H. 13

if x is an integer then $x+1$ is the next (aka consecutive) integer

So 4 consecutive integers are

x
$x+1$
$x+2$
$x+3$

therefore

$x+x+1+x+2+x+3=58$

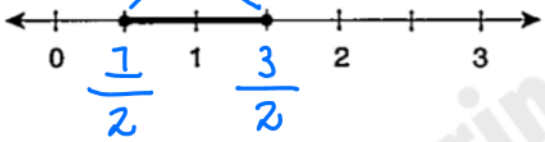
$4x+6=58$

$-6 \quad -6$

$\frac{4x}{4}=\frac{52}{4}=13$

113.

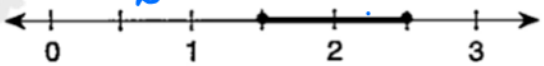
filled in, so value is included



$\frac{1}{2}$ $\frac{3}{2}$

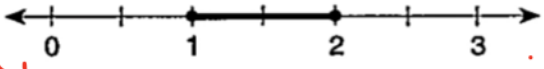
If all possible values of x are indicated by the shaded part of the number line above, which number line best shows all possible values of $\frac{1}{x}$? $\frac{1}{\frac{1}{2}} = 2$ $\frac{1}{\frac{3}{2}} = \frac{2}{3}$ see q 109 re: KCF

A.



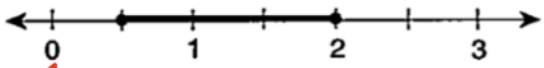
$\frac{3}{2} \leq x \leq 2.5$

B.

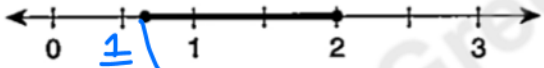


$1 \leq x \leq 2$

C.



D. $\frac{1}{2} \leq x \leq 2$



$\frac{1}{2}$ $\frac{2}{3}$

$\frac{2}{3} \leq x \leq 2$

114. Chanelle selects a marble from a container and then returns it to the container. When she does this 3 times, the probability of choosing a red marble all 3 times is $\frac{1}{216}$. Based on this information, what is the probability of Chanelle choosing a red marble the **first** time she selects a marble?

$P_{red} = \frac{1}{total}$

E. $\frac{1}{72}$ P_{red} 3 times is

F. $\frac{1}{36}$ $\frac{1}{total} \times \frac{1}{total} \times \frac{1}{total} = \frac{1}{total^3}$

(think red and red and red)

G. $\frac{1}{8}$ $\frac{1}{total^3} = \frac{1}{216}$

H. $\frac{1}{6}$ therefore

$total^3 = 216$

$total = \sqrt[3]{216} = 6$

$P_{red} = \frac{1}{6}$

Specialized High Schools Admissions Test (SHSAT) - Practice Test for 2024 Admissions

امتحان القبول بالمدارس الثانوية المتخصصة (SHSAT)
امتحان تجريبي للإلحاق في عام 2024

স্পেশালাইজড্ হাই স্কুলস্ অ্যাডমিশন্স টেস্ট (SHSAT)
2024 সালের ভর্তি পরীক্ষার অনুশীলনী

特殊高中入學測驗 (SHSAT)
模擬測驗 (2024年入學)

Test d'entrée e[illegible] (SHSAT)
Examen pla[illegible] pour les adm[illegible]sions de 2024

[illegible]gzamen admisyon nan lekòl segondè espesyalize (SHSAT)
[illegible] pou admisyon 2024

특수목적 고등학교 [illegible] (SHSAT)
20[illegible]년도 [illegible]형 대비 연습의 시험

Экзамен в специализированные средние школы (SHSAT)
Тренировочный тест для поступления в среднюю школу в 2024 г.

Examen de admisión a las escuelas secundarias especializadas (SHSAT)
Examen de práctica para las admisiones de 2024

متخصص ہائی اسکول داخلہ امتحان (SHSAT)
2024 داخلوں کے لیے مشقیہ امتحان

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