1. A square pyramid has a height of 12 cm, base length of 10 cm, and a slant height of 13 cm.

A: the volume of the pyramid

B: the surface area of the pyramid

Find $A + B$

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$$A = \frac{43 + 25 - 6(3 + 16)}{2^4 - 8\left(\frac{14}{3 + 5}\right)}$$

$$B = 18 - 24\left(\frac{11 - 6}{55}\right)$$

$$C = \frac{4^3}{2^8}(15 - 7)(0.5) - (18 - 19)$$

$$D = -2^4$$

Find $A + B + C + D$

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3. Andrew really likes White Cheddar Cheez-Its. He found that the probability of there being **exactly** 20 Cheez-Its in a bag is 1/5.

Find the probability that

A: He opens 2 bags that do not contain exactly 20 Cheez-Its
B: He opens 2 bags with exactly 20 Cheez-Its
C: He opens a bag with 20 Cheez-Its and another bag that does not contain exactly 20 Cheez-Its

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4. Combined, Thomas and I have a total of 165 pies. Combined, Thomas and Michael have 175 pies. Combined, Michael and I have a total of 185 pies. How many pies do I have?

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A = The area of a triangle with base 5 and height 10
B = The volume of a cube with surface area 216
C = The area of a circle inscribed in a square with side length 12
D = The ratio of the circumference of a circle to the radius of a circle

Find in terms of π: A+B+C+D

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6.

M = The slope of the line $4y + 2x = 22$
A = The slope of the line $5x + 7y = 10$
T = The y-intercept of the line $4x + 15y = 20$
H = The x-intercept of the line $3x + 5y = 15$

Find in simplest form:
MATH

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7. Using Pythagorean theorem, find the missing side for the following right triangles.

A: A right triangle with legs of length 3 and 4
B: A right triangle with a leg of length 8 and a hypotenuse of length 10
C: A right triangle with legs of length 5 and 12
D: A right triangle with a leg of length 15 and a hypotenuse of length 17

Find the value of $\frac{ABC}{D}$

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Find the value of $\frac{ABC}{D}$

8. You know that a base 10 number can have the digits 0,1,2,3,4,5,6,7,8 and 9. However, a base 2 number can only have digits 0 and 1.

A: Change 2 from base 10 to base 2
B: Change 10 from base 10 to base 2
C: Change 8 from base 10 to base 2

Find the sum of all the digits in A and B and C

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9. The quadratic formula to solve for x of the form $ax^2 + bx + c = 0$ is shown below:

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Using this, calculate the positive value of

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10.

Find the number of distinct ways of writing the words:

A. PEN

B. PINEAPPLE

C. APPLE

D. PIE

Find $\frac{AB}{DC}$

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11.

A. $f(3)\ where\ f(x) = x^2 + 3x^5 - 90$

B. $g(5)\ where\ g(x) = 9x^3 - 8x$

C. $h(6)\ where\ h(x) = 2x^2 + 6x$

Find $A + B + C$

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12. The distance formula between two points is given by the formula:

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

A. Distance between $(4, 8)$ and $(10,16)$

B. Distance between $(-5, 9)$ and $(-9, 6)$

C. Distance between $(0, 0)$ and $(6, 8)$

D. Distance between $(-8, -52)$ and $(-3, -8)$

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13.

There are 100 students at the Twilight Premiere. 32 students like Jacob, 22 students like Edward, and 27 like Bella. 9 students like both Jacob and Edward, 11 students like both Jacob and Bella, and 7 students like both Edward and Bella. 7 students like all three of the characters. How many students do not like any of the characters?

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14.

A = the number of ounces in 1 ton (2,000 pounds)

B = the number of liters in 320 milliliters

C = the number of cubic feet in 12 cubic yards

D = the number of centimeters in 8100 decameters

Find A + B + C + D

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15.

Samuel is not very good at fractions, so it takes him 5 hours to do his homework. Charlie is even worse at fractions, so it takes him 10 hours. Dina is seriously bad at fractions so it takes her 15 hours to complete her homework. Michael is utterly terrible, so it takes him 20 hours to do his homework.

Calculate the number of Hours it takes Samuel, Charlie, Dina, and Michael to do the homework together

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