

Math Bowl  
March 20, 2013

1. Five kids each grabbed a handful of chocolate Easter eggs from a jar. Arnold had seven more eggs than Beatrice, and Beatrice had six less than Claudia. Edgar had three more than David and Claudia had one more than Edgar. Beatrice and Edgar had nine chocolates between them. How many chocolates were in the jar to start with?

$$\begin{aligned} A &= B + 7 \\ B &= C - 6 \\ E &= D + 3 \\ C &= E + 1 \end{aligned}$$

$$\begin{aligned} 9 &= B + E \\ 9 &= (C - 6) + (D + 3) \\ 9 &= (E + 1) - 6 + (E - 3) + 3 \\ 9 &= E - 5 + E \\ 9 &= 2E - 5 \\ 14 &= 2E \\ \textcircled{7} &= E \end{aligned}$$

$$\begin{aligned} C &= 7 + 1 = \textcircled{8} \\ B &= 8 - 6 = \textcircled{2} \\ A &= 2 + 7 = \textcircled{9} \\ D + 3 &= 7 \\ D &= \textcircled{4} \end{aligned}$$

$$\begin{aligned} A + B + C + D + E &= 9 + 2 + 8 + 4 + 7 \\ &= 30 \end{aligned}$$

2. Use  $<$ ,  $>$ , or  $=$  to fill in the box

$(\frac{2}{3})$  of  $(\frac{1}{8})$  of 2300

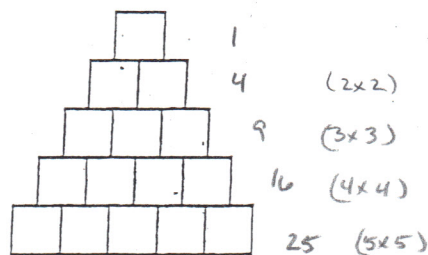


$(\frac{4}{3})$  of  $(\frac{1}{4})$  of 2300

$$\frac{1}{12} \frac{2}{24}$$

$$\frac{4}{12}$$

3. A pyramid is built using cubes. The top layer contains one cube, the second is 2 cubes by 2 cubes (for a total of 4 cubes), etc. How many cubes would be necessary for a 5-tier pyramid?



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4. A ball rebounds  $\frac{2}{3}$  of the height from which it is dropped. If a ball is dropped from a height of 12 feet, how far will it rebound after it hits the floor for a fourth time?

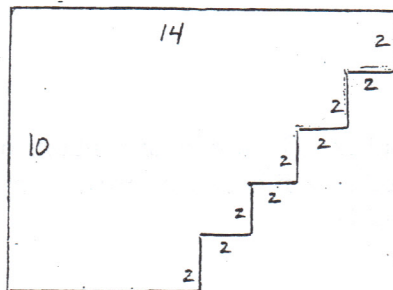
$$\frac{2}{3} \times 12 = 8$$

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

$$\frac{2}{3} \times \frac{16}{3} = \frac{32}{9}$$

$$\frac{2}{3} \times \frac{32}{9} = \frac{64}{27} = 2 \frac{10}{27}$$

5. Find the area of the figure below:



$$\begin{aligned} &100 \\ &5 \times 10 = 50 \\ &14 \times 1 = 14 \\ &14 \times 2 = 28 \\ &50 + 14 + 28 = 92 \end{aligned}$$

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1. Tony has a square lot. He wants to put up a fence around it. One side is 10.5 yards long. If the fencing costs \$2.50 per foot, how much will it cost to build the fence?

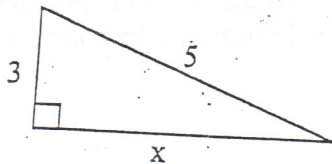
$$10.5 \times 4 = 42 \text{ yd}$$

$$42 \text{ yd} \times 3 \text{ ft/yd} = 126 \text{ ft}$$

$$126 \times 2.5 = 315$$

\$315

2. Find the value of  $x$  in the triangle below.



$$3^2 + x^2 = 5^2$$

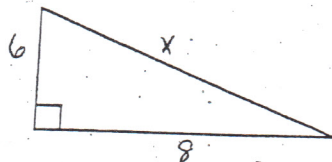
$$9 + x^2 = 25$$

$$x^2 = 16$$

$$x = 4$$

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3. Find the value of  $x$  in the triangle below.



$$6^2 + 8^2 = x^2$$

$$36 + 64 = x^2$$

$$100 = x^2$$

$$10 = x$$

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4. Stampy the Circus Elephant only eats peanuts. He eats 300 pounds of peanuts a day. If each bag of peanuts weighs 152 pounds, how many complete bags does he eat in a week?

$$\begin{array}{r} 300 \\ \times 7 \\ \hline 2100 \end{array}$$
$$\begin{array}{r} 13 \\ 152 \overline{) 2100} \\ \underline{152} \\ 580 \\ \underline{456} \\ 124 \end{array}$$

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5. After being asked a question, Harlan takes 90 minutes to answer the question. He then discusses an unrelated topic for 360 minutes. Harlan then spends 450 minutes trying to relate that topic to the original question. In hours, how long did Harlan talk?

$$\begin{array}{r} 450 \\ 360 \\ + 90 \\ \hline 900 \end{array}$$
$$\begin{array}{r} 15 \\ 60 \overline{) 900} \\ \underline{60} \\ 300 \end{array}$$

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