

91. \$ _____ Vacations-R-Us charges \$130 a day plus a one-time, nonrefundable \$50 cleaning fee to rent a house at the beach. How much will it cost the Sanchez family to rent the house for 7 days?

$$7 \cdot 130 + 50$$

$$910 + 50 = \text{\$}960$$

92. _____ units A circle has a circumference with the same numerical value as its area. What is its radius?

$$C = \pi d \quad A = \pi r^2$$

$$d = r^2$$

$$\frac{2r}{r} = \frac{r^2}{r}$$

$$\textcircled{2} r$$

93. _____ cm If the length of an insect is 4 cm, what is the length of the insect viewed under a magnifying glass that magnifies an object to three times its original size?



$$\begin{array}{r} 4 \\ \times 3 \\ \hline \textcircled{12 \text{ cm}} \end{array}$$

94. _____ A box contains only red, blue and green tokens. If the probability of randomly choosing a red token is $\frac{1}{5}$ and the probability of randomly choosing a blue token is $\frac{1}{3}$, what is the probability of randomly choosing a green token? Express your answer as a common fraction.

$$P(R) = \frac{1}{5} \quad P(B) = \frac{1}{3}$$

$$\frac{1}{5} + \frac{1}{3} = \frac{3}{5} + \frac{5}{15} = \frac{8}{15} \quad (\text{amt of red/blue})$$

$$1 - \frac{8}{15} = \textcircled{\frac{7}{15}}$$

$$\frac{15}{15} - \frac{8}{15}$$

95. _____ integers How many three-digit positive integers are square numbers?

$$10^2 = 100 \quad 32^2 = 1024$$

$$31^2 = 961 \quad 31 - 10 = 21 + 1 = \textcircled{22}$$

3 digit sq #s

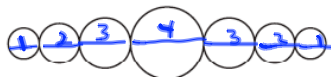
96. s _____ The table shows the total dollar amounts of purchases by 21 randomly selected customers at a department store. What is the median of the dollar amounts?

\$10	\$18	\$10	\$22	\$14	\$41	\$31
\$43	\$8	\$6	\$27	\$18	\$27	\$32
\$5	\$53	\$30	\$25	\$30	\$22	\$42

5-1 14-1 30-2 53-1
 6-1 18-2 3.1-1
 8-1
 10-2 22-2 32-1
 25-1 41-1
 27-2 42-1

21 #s
 so 11th #
 is median
 25

97. _____ cm A necklace is made of beads with centers that are collinear, as shown. The beads have diameters of integer lengths a, b, c and d cm such that $a:b:c:d = 1:2:3:4$. What is the smallest possible total length of the seven beads on the necklace?

 add 7 diams
 $1x + 2x + 3x + 4x$ $x = 1$ smallest integer value for length
 $1 + 2 + 3 + 4 + 3 + 2 + 1 = 16$

98. _____ The number 6D45, where D represents a digit, is divisible by 3. What is the sum of all possible values of D?

$6 + 0 + 4 + 5$
 sum
 ÷ by 3

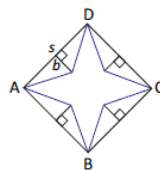
$6 + 4 + 5 = 15 + \frac{D}{10}$
 $15 + 3$
 $15 + 6$
 $15 + 9$

$0 + 3 + 6 + 9 = 18$

99. _____ For what value of m does $\frac{1}{m} + \frac{1}{2m} = 6$? Express your answer as a common fraction.

$\frac{2m}{1} \left(\frac{1}{m} + \frac{1}{2m} = 6 \right) 2m$
 $2 + 1 = 12m$
 $3 = \frac{12m}{12}$
 $\frac{3}{12} = m$
 $\frac{1}{4} = m$

100. _____ units²



Square ABCD, shown here, has sides of length s units. A star is formed, creating four congruent isosceles triangles, each with a height of b units. What is the area of the star in terms of s and b ?

Area of Star = Area of square - 4 congruent Δ s
 $= s^2 - 4 \left(\frac{1}{2}bh \right)$
 $= s^2 - 4 \left(\frac{1}{2}bs \right)$
 $= s^2 - 2bs$

101. ha A pasture with an area of 25 hectares is enclosed using 2 km of fencing. Another pasture is to be enclosed. For the second pasture, how many hectares of land can 8 km of fencing enclose if the two fenced areas are similar?

$$\begin{aligned} \text{ratio of perimeters} &= \frac{2}{8} = \frac{1}{4} \\ \text{ratio of areas} &= \frac{1^2}{4^2} = \frac{1}{16} \\ \frac{1}{16} &= \frac{25}{x} \\ x &= 16 \cdot 25 \\ &= \mathbf{400} \end{aligned}$$

102. stickers Angie is purchasing stickers to make house numbers for the houses in her neighborhood. If the houses are numbered consecutively from 101 to 250 and each sticker contains a single digit, how many stickers containing the digit 3 does Angie need to purchase?



101 to 199 ten 3s in 10s place
 ten 3s in ones place
 200 to 250 ten 3s in 10s place
 five 3s in ones place
35

103. For what value of x does $3x + 3 = 2x + 7$?

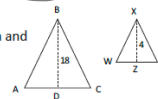
$$\begin{array}{r} 3x + 3 = 2x + 7 \\ -2x \quad -2x \\ \hline x + 3 = 7 \\ -3 \quad -3 \\ \hline x = 4 \end{array}$$

104. mi Tim drove at an average rate of 30 mi/h, and Kim drove at an average rate of 40 mi/h for three times as long as Tim. Together they drove a total of 225 mi. How far did Tim drive?

	r	t	d
Tim	30	x	30x
Kim	40	3x	120x

$$\begin{aligned} 30x + 120x &= 225 \\ 150x &= 225 \\ \frac{150x}{150} &= \frac{225}{150} \\ x &= \frac{3}{2} = 1\frac{1}{2} \text{ hr Tim drove} \\ d &= 30(x) = 30 \cdot \frac{3}{2} = \mathbf{45 \text{ miles}} \end{aligned}$$

105. cm Triangle ABC with an area of 243 cm² is similar to ΔWXY. If BD = 18 cm and XZ = 4 cm, what is the length of segment WY?




$$\begin{aligned} \frac{xz}{BD} &= \frac{4}{18} \\ 243 &= \frac{1}{2} (AC)(18) \\ 243 &= \frac{9}{2} AC \\ 27 &= AC \\ \frac{4}{18} &= \frac{WY}{27} \\ 4 \cdot 27 &= 18WY \\ \frac{108}{18} &= \frac{18WY}{18} \\ \mathbf{6} &= WY \end{aligned}$$

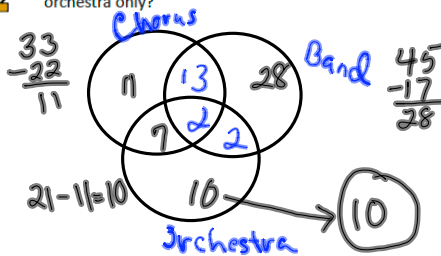
106. (,) What are the coordinates of the midpoint of segment AB with endpoints A(-2, 4) and B (3, -3)? Express the coordinates as decimals to the nearest tenth.

$$\frac{-2+3}{2}, \frac{4+(-3)}{2}$$

$$\frac{1}{2}, \frac{1}{2}$$

$$(.5, .5)$$

107. _____ students  At Euclid Middle School there are 33 students in the chorus, 45 students in the band and 21 students in the orchestra. Fifteen students are in both the band and chorus, 9 are in both orchestra and chorus, 4 are in the band and orchestra and 2 students are in all three. How many students are in the orchestra only?



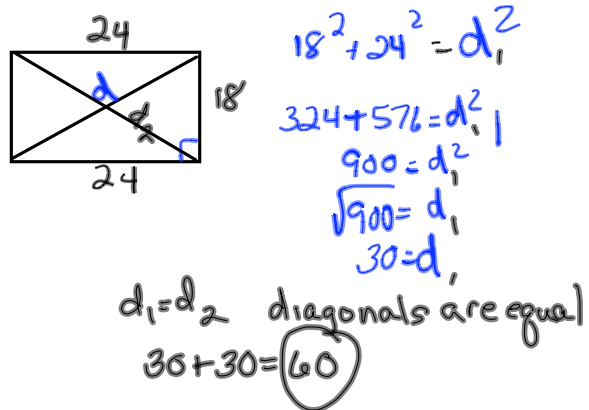
108. _____ What is the positive difference between the range and the mean of the set {4, 5, 7, 7, 8, 8, 8, 9, 16}?

$$\text{range} = 16 - 4 = 12$$

$$\text{mean} = \frac{4+5+7+7+8+8+8+9+16}{9} = 8$$

$$12 - 8 = 4$$

109. _____ m A rectangle measures 18 m by 24 m. What is the sum of the lengths of its diagonals?



110. _____ mi/h Blake traveled 117 mi in 2.25 hours to come home from college. What was the average speed at which Blake traveled?

$$117 \div 2.25 = 52$$