

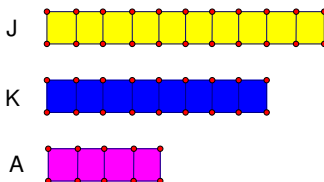


Math Olympiad and Problem Solving Programs
 F130 - Advanced Problem Solving
 Problem Set 17.2 - Decimals

Name: _____

Date: _____

1. $\boxed{\$5.20}$
2. $\boxed{\$469.20}$
3. The total weight of his pumpkins is $2.1 + 3.2 + 2.4 = 7.7$ pounds. If pumpkins are \$3.00 per pound, then he paid $7.7 \times \$3.00 = \23.10 for his pumpkins. The total weight of the gourds are $3.7 + 4.2 = 7.9$. If gourds are \$3.60 per pound, he paid $7.9 \times \$3.60 = \28.44 for the gourds. So the total he spent is $\$23.10 + \$28.44 = \boxed{\$51.54}$.
4. The squirrel works normal working hours from 10am - 12 pm, 2pm - 9pm, which is a total of 9 hours. He makes \$3.50 during these hours, so the total he makes for normal hours in a day is $9 \times \$3.50 = \31.50 . The squirrel works special hours from 12pm - 2pm, 9pm - 10pm, which is 3 hours. He makes \$2.10 more during these hours, so his wage is $\$3.50 + \$2.10 = \$5.60$ an hour, so he makes $3 \times \$5.60 = \16.80 during the special hours of the day. So his total DAILY income is $\$31.50 + \$16.80 = \$48.30$. He works 5 days a week, so his WEEKLY income is $\$48.30 \times 5 = \boxed{\$241.50}$
5. There were $500 \times 0.17 = 85$ girls, $500 \times 0.18 = 90$ boys, $500 \times 0.34 = 170$ women, and $500 - 85 - 90 - 170 = 155$ men. So there were $170 - 155 = \boxed{15}$ more women than men.
6. $\boxed{48}$
7. Profit = All the money he earns selling – what he paid in the beginning.
 Tayo bought 12 crates for \$32 a crate, so he spent $12 \times \$32 = \384 .
 Each crate had 15 shells, so he bought $12 \times 15 = 180$ shells. If packed half of them ($180 \div 2 = 90$ shells) into boxes of 3 ($90 \div 3 = 30$ boxes of 3) and sold them at \$10.20 per box (he made $30 \times 10.20 = \$306$). He sold the rest (90 of them) at \$3.00 each (so he made $90 \times \$3.00 = \270). So all the money he earned is $\$306 + \$270 = \$576$.
 Finally, his profit = $\$576 - \$384 = \boxed{\$192}$
8. When in doubt, use boxes! Let's make a box diagram for this problem. We will draw Joanne's picture as one big box split into 10 mini boxes. Kathleen has 0.8 times as many pictures, or $\frac{8}{10}$ pictures as Joanne. So we will represent this as 8 boxes, because $\frac{8}{10}$ of 10 boxes is 8. Andrea has 0.5 times as many pictures as Kathleen, or half Kathleen's pictures. Since Kathleen has 8 boxes, half of 8 boxes is 4, so Andrea has 4 boxes.



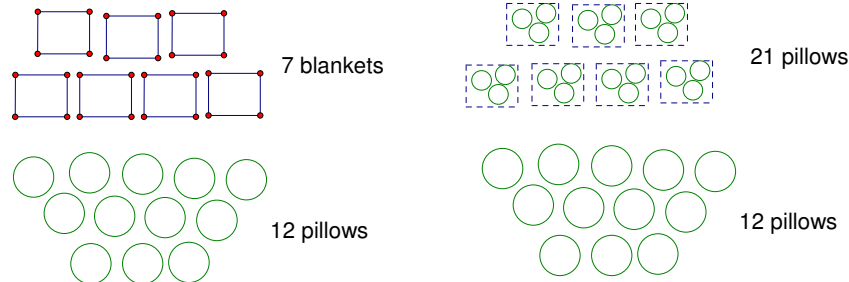
They have 308 pictures altogether, and they have $10 + 8 + 4 = 22$ boxes altogether. So each box represents $308 \div 22 = 14$ pictures. We want to know how many more picture Joanne

has than Andrea. Andrea has 4 boxes, and Joanne has 10, so Joanne has 6 more boxes than Andrea. $6 \text{ boxes} \times 14 \text{ pictures} = \boxed{84}$ more pictures.

9. If the muffin costs \$0.50 more than a cookie, it costs $\$0.50 + \$0.80 = \$1.30$ each. We know Karen bought 3 more cookies than muffins, but to make this problem easier, let's pretend she never bought those extra three cookies. So if she didn't buy those extra 3 cookies, she would have spent $3 \times \$0.80 = \2.40 less, so her total would have been $21.30 - 2.40 = \$18.90$. Now we know she bought the same number of cookies and muffins. Let's call each pair of cookie + muffin a Double Deal. Then a Double Deal costs $\$0.80 + \$1.30 = \$2.10$. Now we can find out how many Double Deals Karen bought. She spent \$18.90 on things that cost \$2.10 each, so she bought 9 Double Deals. This means she bought 9 cookies and 9 muffins.

Now the problem asks how many cookies she bought. We can't just put 9, because we ignored those extra 3 cookies at the beginning, so we have to include those. So she bought $9 + 3 = \boxed{12}$ cookies.

10. I will draw the items to help us with our understanding. I drew the 7 blankets as squares and the 12 pillows as circles. We know each blanket costs three times as much as each pillow, so we know 1 blanket = 3 pillows. Now let's pretend Mom didn't buy any blankets, only pillows. Then we can replace each blanket with 3 pillows. So now instead of 7 blankets, we have $3 \times 7 = 21$ pillows.



Now we have $21 + 12 = 33$ pillows that cost the same as 12 pillows and 7 blankets. So 33 pillows costs \$181.50. We divide and get that each pillow costs $\$181.50 \div 33 = \5.50 . We know blanket = $3 \times$ pillow, so blanket = $3 \times \$5.50 = \16.50 . Thus, each blanket costs $\$16.50 - \$5.50 = \boxed{\$11}$ more than each pillow.