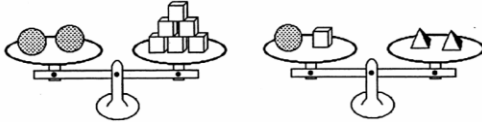
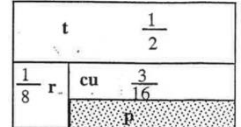


1. We can put 7 students (3 boys and 4 girls) into one group. The school has 20 such groups, since $140 \div 7 = 20$. Each group has 3 boys, so in total there are 60 boys.
60.

2. Each tape is cheaper if bought in packages of 3 than in packages of 2, as $\$11.75 \div 3 = \3.92 and $\$7.95 \div 2 = 3.98$. Then the strategy of “buy all the packages of 3 you can first, and finish out with packages of 2” can be used. Seven packages of 3 tapes, which equal 21 tapes, can be purchased for \$82.25. Two more tapes are needed to total 23, and one package of 2 will add \$7.95 for a total of \$90.20.
A. 90.2

3. 2 spheres (240 gms) equal 6 boxes, so a box must equal 40 gms. If one sphere and one box (120+40) equal 2 pyramids, then each pyramid is half of that sum, or 80.

4. The tomatoes (t) take up $\frac{1}{2}$, and the radishes (r) $\frac{1}{4}$ of what is left, or $\frac{1}{8}$ of the total garden. This leaves $\frac{3}{8}$ of the garden for the cucumbers (cu) and peppers (p), to be split evenly. $\frac{3}{8} \div 2 = \frac{3}{8} \times \frac{1}{2} = \frac{3}{16}$
C. $\frac{3}{16}$



C. 80

5. a. \$0.50 each day: $\$0.50 \times 31 = \15.50
b would give you the sum of the numbers from 1 to 31, multiplied by \$0.10.

An easier way to get the total of $1+2+\dots+29+30+31$:
 $1+2+3+\dots+29+30=(1+30)+(2+29)+\dots+(15+16)=31 \times 15=465$
So, $1+2+\dots+29+30+31=465+31=496$

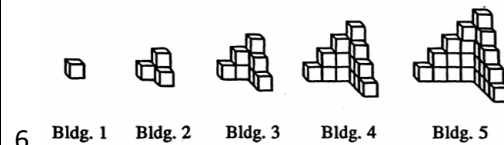
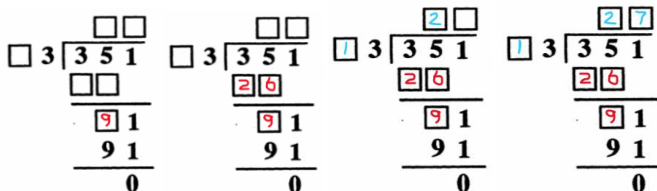
$\$0.10 \times 496 = \49.60

C shows the power of doubling.

Day	1	2	...	10	11	12	13	14	...
\$	0.01	0.02	...	5.12	10.24	20.48	40.96	81.92	...

C. c

7. The strategy is to begin at the end, and work backwards.



Bldg. 1	Bldg. 2	Bldg. 3	Bldg. 4	...	Bldg. 10
1	$2+1 \times 2$	$3+(2+1) \times 2$	$4+(3+2+1) \times 2$...	$10+(9+8+\dots+1) \times 2$
1	4	9	16	...	100

C. 100

9. Begin by seeking digits that would produce 32 in the thousands place of the answer, 4 and 8. From that point, guessing and checking will lead to the answer.

If $\boxed{8} \boxed{} \boxed{} \boxed{} \times \boxed{4} = 32,208$, then consider $208 \div 4 = 52$. The formula doesn't contain digit 5.
If $\boxed{4} \boxed{} \boxed{} \boxed{} \times \boxed{8} = 32,208$, then consider $208 \div 8 = 26$. So the formula is $4026 \times \boxed{8} = 32,208$. It works!

8. The strategy is to work backwards. At her last stop, Shomika had 26 oranges so that she could give Josie $\frac{1}{2}$ of that, plus 3, leaving 10. Shomika had 58 oranges so she could give Angela half, plus 3, leaving 26. Shomika started with 122 oranges so she could give half, plus 3, to Jennifer, leaving 58.
B. 122

10. There are 52 cards. Out of each suit, there are two cards that are multiples of 5, the 5 and the 10. There are two red suits, diamonds and hearts. Therefore there are four such cards, out of 52 in the deck.

C. $\frac{4}{52}$



11. Use A, B, C, D, E, and F to represent the six classrooms, and each class needs to play 5 games. Also, each game between two classes should only be counted once.

C. 15

	Opponents:					
Class:	A	B	C	D	E	F
A		AB	AC	AD	AE	AF
B	AB		BC	BD	BE	BF
C	AC	BC		CD	CE	CF
D	AD	BD	CD		DE	DF
E	AE	BE	CE	DE		EF
F	AF	BF	CF	DF	EF	