1. If x represents the number of cents William has, and John has one-fourth as many, what represents the number that John has? What the number that both have?

2. Represent the cost of 8 pounds of sugar at a cents a pound.

3. Represent the cost of 1 doz. eggs, if 4 doz. cost a cents.

4. Represent the cost of $\frac{1}{2}$ doz. eggs, if 1 doz. cost a cents.

5. Represent the cost of $\frac{3}{4}$ of a pound of meat at a cents a pound.

6. Shorten the expressions: $2a+6a+10+2a+4$; $7x+3y+2+8+4y+3x$; $9a+4b+7a+3b+6+2a+9$.

7. Read the equations: $10=7+3$; $20=24-4$; $x=a+4$; $x=a+b$; $3x+2y=40$.

8. Find the value of x and y in the following equations, letting $a=8$ and $b=6$: $x=2a+4$; $x=9a+2b$; $y=7a+6b$; $x=4a-3b$; $2x=2a+2b$.

9. Find the value of x and y in the following equations:

$$12x=20+4; \qquad 4x+3x=63; \qquad y+3y=36.$$

10. Express 4 times x; $\frac{1}{2}$ of x; $\frac{3}{4}$ of x; $1\frac{1}{2}$ times x; $6\frac{2}{3}$ times x; $x\div y$; $3x\div 4$.

Find the value of x in the following equations:

11. $\frac{x}{4}=12$; $x+\frac{x}{2}=24$; $\frac{3x}{4}=18$.

12. $\frac{6x}{8}=6$; $\frac{3x}{4}+\frac{x}{4}=16$; $\frac{5x}{6}-\frac{x}{3}=14$.

13. $\frac{3x}{10}+\frac{x}{5}=25$; $\frac{8x}{12}-\frac{x}{6}=24$; $\frac{5x}{9}-\frac{x}{3}=20$.

14. $x+\frac{3x}{4}-\frac{x}{4}=12$; $\frac{5x}{8}+\frac{3x}{4}=22$; $x-\frac{3x}{10}=14$.

15. $\frac{114}{12}-\frac{x}{3}=12$; $\frac{5x}{6}+\frac{3x}{4}=9\frac{1}{2}$; $7x+\frac{x}{2}+\frac{x}{4}=31$.

16. How can you divide 18 cents between John and James so that John will have twice as many cents as James? (Let x represent the number of cents that James has.)