The cosine of 60° is 1/2, and the cosine is positive in the fourth quadrant. Therefore, we can write

$$\cos 300° = \cos 60° = \frac{1}{2}$$

Therefore, we have $\cos 300° = 1/2$. Since we want $5/3 \cos 300°$, we multiply by 5/3. Therefore, we have

$$\frac{5}{3} \cos 300° = \frac{5}{3} \cdot \frac{1}{2} = \frac{5}{6}$$

**problem set
27**

1. Next year George will be twice as old as Marshall will be then. Five years ago George was 8 times as old as Marshall was then. What are their ages now?

2. Marie can eat the entire cake in 10 minutes. Antoinette joins her after 3 minutes, and together they eat the rest of the cake in 4 minutes. How long would it have taken Antoinette to eat the entire cake alone?

3. Matilda was dismayed when she found out that it would take 2 workers 3 days to do 6 jobs. So she hired 4 more workers. Now how many days will it take all the workers to complete 6 jobs?

4. The number of reds was 11 fewer than the sum of the blues and whites. The number of whites was 3 fewer than the sum of the reds and blues. How many of each were there if the number of whites was 1 greater than the number of blues?

5. Acorns varied directly as walnuts and inversely as squirrels squared. When there were 28 acorns, there were 7 walnuts and 3 squirrels. How many acorns were there when there were 4 walnuts but only 2 squirrels?

6. Find the equation of the line which passes through $(2, -1)$ and is parallel to the line $3y - 2x + 1 = 0$.

7. Write $7 = 3^k$ in logarithmic form.

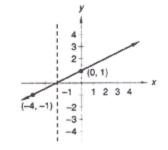8. Write $\log_m 8 = n$ in exponential form.

Solve:

9. $\log_b 64 = 3$ 10. $\log_3 \frac{1}{27} = n$ 11. $\log_{1/2} a = -2$

12. Sketch the graphs of the functions:

(a) $f(x) = 5^x$ (b) $g(x) = \left(\frac{1}{5}\right)^x$

13. The equation of the function whose graph is shown is $f(x) = \frac{1}{2}x + 1$. We have placed dots at $(0, 1)$ and $(-4, -1)$ because the y coordinate has a value of 1 or −1 at these points and the graph of the reciprocal function will also pass through these points. The graph of the reciprocal function will have a vertical asymptote at $x = -2$, as we have indicated by the dotted line. Make a sketch of the graph of the reciprocal function $g(x) = \frac{1}{\frac{1}{2}x + 1}$.