Problem Set 9

1. Evaluate the expression $\dfrac{3a-4b+6ab-2}{3a-2}$ if

   (a) $a=3$ and $b=-2$

   (b) $a=\dfrac{2}{3}$ and $b=\dfrac{1}{2}$

   (c) $a=-\dfrac{1}{6}$ and $b=1\dfrac{1}{2}$

2. Apply the law of distributivity to simplify each of the following expressions.

   (a) $3\,(x-1)=$

   (b) $\dfrac{1}{2}\,(4x-18)=$

   (c) $-1\,(x-2)=$

   (d) $-2x\,(5-4x)=$

3. Simplify each of the following expressions by combining like terms.

   (a) $5a-2a=$

   (b) $-x+3-2x+1+10x=$

   (c) $a+2b-3a+b=$

   (d) $-2+6x-2-x+5+3x=$

   (e) $\dfrac{1}{3}x-\dfrac{1}{2}+\dfrac{2}{3}x-3+\dfrac{3}{2}-x=$

4. A cab driver charges customers \$2 for the first mile and then \$0.15 for each additional mile. After we take a drive, we owe \$11. How far did we drive?

5. I'm thinking of a number. When I subtract 3 from four times the opposite of this number, I get -19. What number am I thinking of?

6. Ann and Betty dine together. They share the \$25 bill as follows. Betty pays \$3 more than Ann. How much do they each pay?

7. Temperature can be measured in celsius and in Farnheit. The conversion formula is as follows: if the temperature is F Farenheits, then the same temperature is C celsius, where

$$F=\frac{9}{5}C+32$$

   (a) Convert 35 celsius to farenheit.

   (b) Convert 122 farenheit to celsius.

   (c) Is there a temperature for which the farenheit measure is the same number as the celsius measure?