Lines and graphs

1) Graph the line $y = 3x - 4$. Label both intercepts and at least one other point.

2) Graph the line $2x + 7y = 11$. Label both intercepts and at least one other point.

3) Graph the line $x = -3$. Label all intercepts and at least one other point.

4) Graph the line $y = 7$. Label all intercepts and at least one other point.

5) Find the equation of the line through (0, 2) and (5, 1).

6) Find the equation of the line through (–2, –4) and (9, 1).

7) Find the equation of the horizontal line through (8, –2).

8) Find the equation of the vertical line through (–3, –4).

Word Problems with equations of lines

For each problem, graph the linear relationship, and find a linear equation relating the two variables

1) The tax on \$0 is \$0. The tax on \$10 is 78¢. The tax on \$20 is \$1.56.
(x = amount spent, y = tax)

2) You run at a constant speed. After 7 minutes, you have traveled 1 mile. After 14 minutes you have gone 2 miles. (x = time, y = position)

3) The fee for entering a taxi is \$3.00 even if you travel no distance at all. For a 5-mile ride, the fee is \$10. For a 10-mile ride, the fee is \$17. (x = distance, y = fee)

4) A perfect pumpkin (with no lumps) costs \$6.80. Each lump reduces the price by a certain amount. A pumpkin with 5 lumps costs \$4.80. (x = # of lumps, y = cost)

5) You begin making hats at 8AM. At 10AM, you have made 8 hats. At noon, you have made 16 hats. (x = time (since midnight), y = # of hats made so far)

6) There is no charge for the first 150 texts you send in a month. The charge for 200 total texts in a month is \$6. The charge for 250 texts is \$12. (x = # of texts, y = charge)

7) You begin driving at 3PM. At the beginning of the drive, you are at mile marker 320. At 6PM, you are at mile marker 155. (x = time (after noon), y = position)

8) The volume of a balloon at 20°C is 14.0 liters. The same balloon at 80°C is 16.9 liters. (x = temperature, y = volume)