Name _____

3-4A Lesson Master

Questions on SPUR Objectives
See Student Edition pages 215–219 for objectives.

SKILLS Objective B

In 1–6, write an equation for the line

1. through $(7, 2)$ with a slope of $\frac{3}{2}$. _____

2. containing $(-1, 5)$ and parallel to $3x + 5y = 19$. _____

3. containing $(4, 2)$ and $(6, -3)$. _____

4. that is vertical, through $(-3.6, -8.4)$. _____

5. containing $(120, 700)$ and $(150, 850)$. _____

6. containing $(7, -12)$ and $(9, -12)$. _____

USES Objective I

In 7–9, a. find an equation relating the variables, and b. use your equation from Part a to answer the question.

7. Acme Yearbook Company will print 400 yearbooks for $20,000 or 800 yearbooks for $38,000. If the cost is linearly related to the number of yearbooks, how much would they charge for 650 yearbooks?

   a. _____   b. _____

8. Ms. Jacobs sells used cars. She gets a regular salary plus a commission (a percentage of her sales). One week, she sold $26,000 worth of cars and earned $860. The next week she sold $20,000 worth of cars and earned $800. How much must she sell to earn $1000 in a week?

   a. _____   b. _____

9. The Kelvin temperature scale is often used by scientists who work with very cold materials. Water freezes at 32°F or 273 K. Water boils at 212°F or 373 K. What Fahrenheit temperature corresponds to 0 K?

   a. _____   b. _____

Name

_____

USES   Objective K

10. The table at the right shows the amount of Federal income tax that a single person would pay at three of the 2007 tax rates. Translate it to a piecewise linear function $T(x)$ where x is the person's income.

| If taxable income is over –	But not over –	The tax is:
$0	$7825	10% of the amount over $0
$7825	$31,850	$782.50 plus 15% of the amount over $7825
$31,850	$77,100	$4386.25 plus 25% of the amount over $31,850

$$T(x) = \begin{cases} \rule{6cm}{0.4pt} \; ; 0 < x \le 7825 \\ \rule{5cm}{0.4pt} \; ; \rule{2cm}{0.4pt} < x \le \rule{2cm}{0.4pt} \\ \rule{5cm}{0.4pt} \; ; \rule{3cm}{0.4pt} \end{cases}$$

11. A copy store's charges are shown at the right. Rewrite the charges as a piecewise function $C(n)$ where n is the number of copies.

> **Black & White Copies**
> **1–99: 10¢ each**
> **100+: 8¢ each**

_____

REPRESENTATIONS   Objective N

In 12–16, refer to the graph at the right, which shows the cost of a cell phone plan as a function of the number of minutes m that are used in a given month.
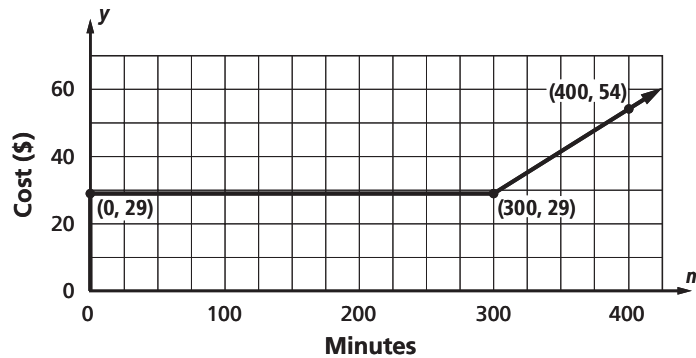
12. Find an equation for the horizontal section of the graph.

_____

13. For what values of m does this equation apply?

_____

14. Find an equation for the oblique section of the graph. _____

15. For what values of m does the equation from Question 14 apply? _____

16. **Fill in the Blanks** Provide the details of the plan: The basic rate is _____ per month

including _____ free minutes. Additional minutes cost _____ each.