10) An equation for the linear relation is:
$m = 100 - 2n$,
where n is the number of months that Herbie trains and m is his mass at any time in kilograms.
Here is a table of values.

n	0	2	4	6	8	10
m	100	96	92	88	84	80

a) Construct a graph for the data.
b) Describe the relationship between the variables in the graph.
c) Find the ordered pair on the graph that indicates Herbie's mass after 7 months. Explain how you did this.

11. **Assessment Focus** Regina plans a marshmallow roast. She will buy 8 marshmallows for each person who attends, and 12 extra marshmallows in case someone shows up unexpectedly. Let n represent the number of people who attend. Let m represent the number of marshmallows Regina must buy. An equation that relates the number of marshmallows to the number of people is: $m = 8n + 12$

a) Create a table of values for the relation.
b) Graph the relation.
c) Describe the relationship between the variables in the graph.
d) Is the relation linear? How do you know?

12. Graph each relation for integer values of x from -4 to 4.

a) $y = 8x + 2$ **b)** $y = -8x - 2$

c) $y = -7x + 4$ **d)** $y = 5x - 4$

13. Peter's Promoting is organizing a concert. The cost of the venue and the rock band is \$15 000. Each concert ticket sells for \$300. Peter's profit is the money he makes from selling tickets minus the cost. Let n represent the number of tickets sold. Let p represent Peter's profit. An equation that relates the profit to the number of tickets sold is:

$p = 300n - 15\,000$

a) Create a table of values for the relation. Use these values of n: 10, 20, 30, 40, 50, 60, 70, 80

b) Graph the relation. What do negative values of p represent?

c) Describe the relationship between the variables in the graph.

d) How can you use the graph to find the profit when 75 tickets are sold?

18. The equation of a linear relation is:
$y = -7x + 4$
Find the missing number in each ordered pair.
a) $(-2, \quad)$ **b)** $(\quad, -17)$
c) $(8, \quad)$ **d)** $(\quad, 4)$

pg. 364 # 10, #11, #12, #13
pg. 373 # 18, 19, 20
NEED more (#15, #21, #22)

19. Francis sells memberships to a local health club. He is paid \$200 per week, plus \$40 for each membership he sells. An equation for this relation is $p = 200 + 40n$, where n represents the number of memberships Francis sells, and p represents his pay in dollars.
a) Use the equation to create a table of values.

b) One week, Francis sold 9 memberships. What was his pay for that week?
c) One week, Francis was paid \$480. How many memberships did he sell that week?

20. Use the data from question 19.

a) Construct a graph for the data.

b) Describe the relationship between the variables in the graph.

c) Find the ordered pair on the graph that shows Francis' pay when he sells 5 memberships.

15. Copy and complete each table of values.

a) $y = x - 8$

b) $y = -x + 5$

x	−3	−2	−1	0	1	2	3
y							

x	−3	−2	−1	0	1	2	3
y	8						

b) x= -3

becarful -1*(x) + 5

-1 (-3) + 5

3 + 5

8

16. Lauree is making friendship bracelets. She needs 6 strands of yarn for each bracelet.
An equation for this relation is $s = 6n$, where n represents the number of bracelets, and s represents the number of strands of yarn needed.

- **a)** Use the equation to create a table of values.
- **b)** Suppose Lauree makes 7 bracelets. How many strands of yarn does she need?
- **c)** Suppose Lauree has 66 strands of yarn.
  How many bracelets can she make?
- **d)** Yarn comes in packages of 20 strands. How many packages of yarn will Lauree need to make 18 bracelets? Explain your answer.

17. Use the data from question 16.

- **a)** Construct a graph for the data.
- **b)** Describe the relationship between the variables in the graph.
- **c)** Find the ordered pair on the graph that shows how many bracelets can be made with 54 strands of yarn.