

2-2 Practice Worksheet for Homework

Name

Date

Block

Master E
E.

Write a compound statement for each conjunction and disjunction. Then find its truth value.

$p: 10 + 8 = 18$

$q: \text{September has 30 days.}$

$r: \text{A rectangle has four sides.}$

1. p and q . $10 + 8 = 18$ and September has 30 days (T) ($T + T = T$)

2. p or r $10 + 8 = 18$ or a rectangle has 4 sides (T) ($T + T = T$)

3. q or r September has 30 days or a rectangle has 4 sides (T) ($T + T = T$)

4. q and $\sim r$ September has 30 days and a rectangle doesn't have 4 sides. (F) $T + F = F$

Use the following statements to write a compound statement for each conjunction and disjunction. Then find

its truth value.

$p: -3 - 2 = -5$

$q: 3(-2) = 6$

$r: 2 + 8 > 10$

$s: 5 - 2 \leq 7$

5. p and q $-3 - 2 = -5$ and $3(-2) = 6$ $T \& F = (F)$

6. $p \wedge r$ $-3 - 2 = -5$ and $2 + 8 > 10$ $T \& F = (F)$

7. p or s $-3 - 2 = -5$ or $5 - 2 \leq 7$ T or $T = (T)$

8. $r \vee s$ $2 + 8 > 10$ or $5 - 2 \leq 7$ F or $T = (T)$

9. $p \wedge \sim q$ $-3 - 2 = -5$ and $3(-2) \neq 6$ T and $T = (T)$

10. $q \vee \sim r$ $3(-2) = 6$ or $2 + 8 \not> 10$ F or $T = (T)$

Complete the following truth tables.

11.

$\sim p$	p	q	$\sim q$	$\sim p \vee \sim q$
F	T	T	F	F
F	T	F	T	T
T	F	T	F	T
T	F	F	T	T

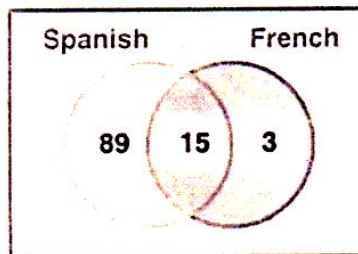
12.

p	q	$\sim p$	$\sim p \wedge q$	$\sim(\sim p \wedge q)$
T	T	F	F	T
T	F	F	F	T
F	T	T	T	F
F	F	T	F	T

Use the Venn Diagrams to answer the following questions.

13. **CLASSES** Refer to the Venn diagram that represents the foreign language classes students selected in high school.

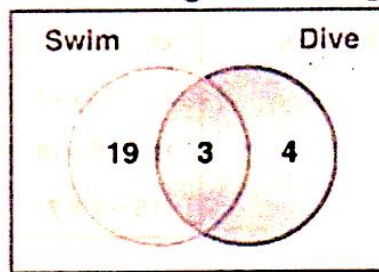
Foreign Language Classes Selected



- How many students chose only Spanish? 89
- How many students chose Spanish and French? 15
- Describe the class(es) the three people in the nonintersecting portion of the French region chose.
Those 3 students only took French.

14. **WATER SPORTS** Refer to the Venn diagram that represents the number of students who swim and dive at a high school.

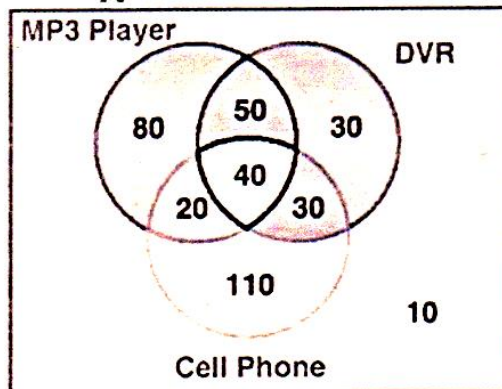
Swimming and Diving



- How many students dive? 7
- How many students participate in swimming or diving or both? $19 + 3 + 4 = 26$
- How many students swim and dive? 3

15. **ELECTRONICS** A group of 330 teens were surveyed about what type of electronics they used. They chose from a cell phone, an MP3 player, and a DVR. The results are shown in the Venn diagram.

Type of Electronics Used



- How many teens used only an MP3 player and DVR? 50
- How many said they used all three types of electronics? 40
- How many said they used only a cell phone? 110
- How many teens said they used only an MP3 player and a cell phone? 20
- Describe the electronics that the 10 teens outside of the regions own.
iPod, CD Player, Stereo, etc.