

$10+20 = 30$	Yes	True
2 times an integer is always even	Yes	True
$4 < 5$	Yes	True
$2 + 2$	No	
$x * y$ is odd	No	
$5 + 1$ is odd	Yes	False

Q2 B

$A \parallel B$	$A = \text{TRUE}, B = \text{TRUE}$	TRUE
$A \parallel B$	$A = \text{TRUE}, B = \text{FALSE}$	TRUE
$A \parallel B$	$A = \text{FALSE}, B = \text{TRUE}$	TRUE
$A \parallel B$	$A = \text{FALSE}, B = \text{FALSE}$	FALSE

Q2 C

$A \&\& !B$	$A = \text{TRUE}, B = \text{TRUE}$	FALSE
$A \parallel !B$	$A = \text{TRUE}, B = \text{FALSE}$	TRUE
$!(A \&\& B)$	$A = \text{FALSE}, B = \text{TRUE}$	TRUE
$!(A \parallel B)$	$A = \text{FALSE}, B = \text{FALSE}$	TRUE

Q3

- A) milk \parallel cheese
- B) milk $\&\&$ cheese
- D) milk $\&\& !$ cheese
- F) $!(\text{milk } \&\& \text{ cheese})$
- H) $!\text{milk } \parallel !\text{cheese}$
- I) milk \parallel cheese $\&\& !(\text{milk } \&\& \text{ cheese})$

Q4

A)

p	q	!q	$p \&\& !q$
T	T	F	F
T	F	T	T
F	T	F	F
F	F	T	F

B)

p	q	!p	!q	!p !q
T	T	F	F	F
T	F	F	T	T
F	T	T	F	T
F	F	T	T	T

Q5)

A)

MILK	CHEESE	MILK CHEESE
T	T	T
T	F	T
F	T	T
F	F	F

B)

MILK	CHEESE	MILK && CHEESE
T	T	T
T	F	F
F	T	F
F	F	F

C)

MILK	EGGS	!EGGS	MILK && !EGGS
T	T	F	F
T	F	T	T
F	T	F	F
F	F	T	F

D)

MILK	CHEESE	!MILK && CHEESE
T	T	F
T	F	F
F	T	T
F	F	F

E)

MILK	CHEESE	MILK CHEESE	!(MILK CHEESE)
T	T	T	F
T	F	T	F
F	T	T	F
F	F	F	T

F)

MILK	CHEESE	!(MILK && CHEESE)
T	T	F
T	F	T
F	T	T
F	F	T

G)

MILK	CHEESE	!MILK	!CHEESE	!MILK && !CHEESE
T	T	F	F	F
T	F	F	T	F
F	T	T	F	F
F	F	T	T	T

H)

MILK	CHEESE	!MILK !CHEESE
T	T	F
T	F	T
F	T	T
F	F	T