

[1] [A]

[2] [A]

[3] [A]

[4]  $x \pm 5 < \pm 3$  or  $x \pm 5 > 3$

[5]  $2x + 1 > \pm 7$  and  $2x + 1 < 7$

[6] There exists a triangle that is isosceles.

[7] For all odd positive integers  $n$ ,  $n^2$  is also an odd positive integer.

[8] [B]

[9] [B]

[10] There exist mammals that don't breathe air or no mammals can swim.

[11] No people drink coffee and some people do not eat chocolate.

[12] All rhombuses are not squares, or No rhombuses are squares.

[13] true; 1 is such a number because  $1 = \frac{1}{1}$ .

[14] false; The product of any two negative numbers is a positive number.

[15] false; The statement is not true for  $x = 0$  because  $0^2 = 0$ , so  $0^2 > 0$  is false.

[16] false

[17] [C]

[18] [D]

[19] [A]

[20] [E]

8;  $\pm 1$

	Conclusions	Justifications
	1. $2x + 34 = 2(x \pm 3)^2$	Given
	2. $2x + 34 = 2(x^2 \pm 6x + 9)$	Expand the binomial.
	3. $2x + 34 = 2x^2 \pm 12x + 18$	Distributive Property
	4. $0 = 2x^2 \pm 14x \pm 16$	Addition Property of Equality (Subtract $2x$ ; subtract 34.)
	5. $0 = 2(x^2 \pm 7x \pm 8)$	Factor out the greatest common factor, 2.
	6. $0 = 2(x \pm 8)(x + 1)$	Factor the trinomial.
	7. $x \pm 8 = 0$ or $x + 1 = 0$	Zero Product Property
[21]	8. $x = 8$ or $x = \pm 1$	Solve the linear equations.

$\pm 1$ ; 5

	Conclusions	Justifications
	1. $6x + 18 = 3(x \pm 1)^2$	Given
	2. $6x + 18 = 3(x^2 \pm 2x + 1)$	Expand the binomial.
	3. $6x + 18 = 3x^2 \pm 6x + 3$	Distributive Property
	4. $0 = 3x^2 \pm 12x \pm 15$	Addition Property of Equality (Subtract $6x$ ; subtract 18.)
	5. $0 = 3(x^2 \pm 4x \pm 5)$	Factor out the greatest common factor, 3.
	6. $0 = 3(x + 1)(x \pm 5)$	Factor the trinomial.
	7. $x + 1 = 0$ or $x \pm 5 = 0$	Zero Product Property
[22]	8. $x = \pm 1$ or $x = 5$	Solve the linear equations.

[23] Melinda is happy.

[24] Rick does not read news online.

[25] true \_\_\_\_\_

[26] true \_\_\_\_\_

[27] [B] \_\_\_\_\_

[28] [E] \_\_\_\_\_

[29]  $(p \text{ and } q) \text{ or } (q \text{ and } r)$  \_\_\_\_\_

[30]  $(p \text{ or } q) \text{ and } (\text{not } r)$  \_\_\_\_\_

[31] 

$p$	$q$	Output
1	1	0
1	0	1
0	1	0
0	0	0

 \_\_\_\_\_

[32] 

$p$	$q$	Output
1	1	0
1	0	1
0	1	1
0	0	1

 \_\_\_\_\_

[33] 

$p$	$q$	$p \text{ or } q$	$\text{not } (p \text{ or } q)$	$p \text{ and } q$	$\text{not } (p \text{ or } q) \text{ or } (p \text{ and } q)$
T	T	T	F	T	T
T	F	T	F	F	F
F	T	T	F	F	F
F	F	F	T	F	T

 \_\_\_\_\_

[34]

$p$	$q$	$p \text{ and } q$	$\text{not } q$	$p \text{ and not } q$	$(p \text{ and } q) \text{ or } (p \text{ and not } q)$
T	T	T	F	F	T
T	F	F	T	T	T
F	T	F	F	F	F
F	F	F	T	F	F