Circled exercises were chosen randomly using the "Integer Set Generator" feature on the website `random.org` . Nobody (teachers or students) knew which exercises would be marked until after the deadline had passed.

1.

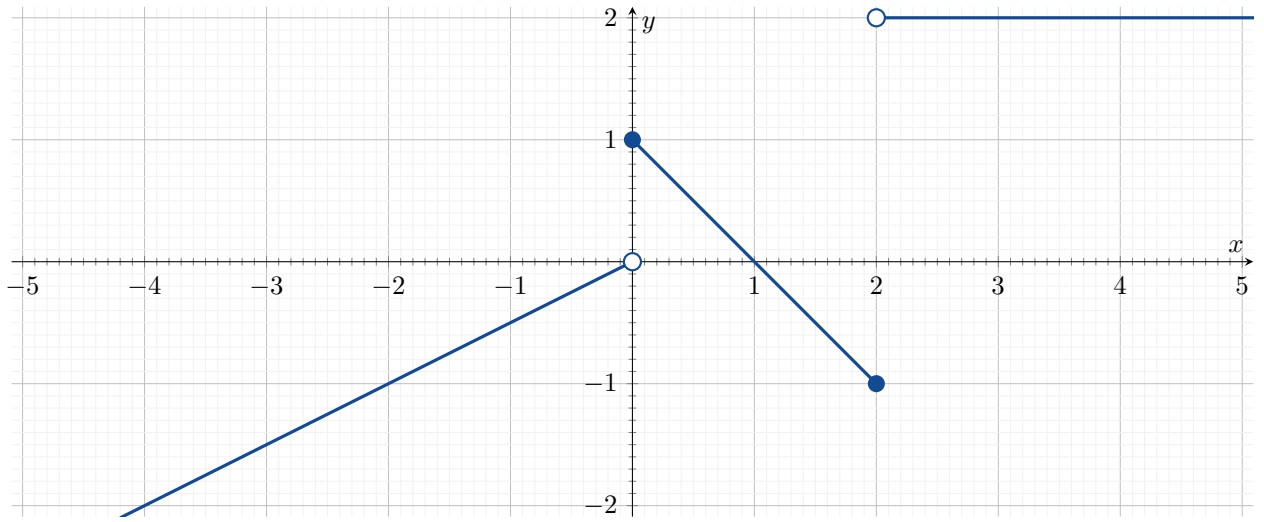| $P$ | $Q$ | $R$ | $Q \vee R$ | $(P \wedge (Q \vee R))$ | $P \wedge Q$ | $P \wedge R$ | $(P \wedge Q) \vee (P \wedge R)$ |
|---|---|---|---|---|---|---|---|
| T | T | T | T | T | T | T | T |
| T | T | F | T | T | T | F | T |
| T | F | T | T | T | F | T | T |
| T | F | F | F | F | F | F | F |
| F | T | T | T | F | F | F | F |
| F | T | F | T | F | F | F | F |
| F | F | T | T | F | F | F | F |
| F | F | F | F | F | F | F | F |

2. (a) $\|AB\| = \sqrt{(-3-1)^2 + (4-1)^2} = \sqrt{16+9} = 5$,

   (b) $\|BC\| = \sqrt{(-3--3)^2 + (0-4)^2} = \sqrt{16} = 4$,

   (c) $\|CA\| = \sqrt{(1--3)^2 + (1-0)^2} = \sqrt{17}$.

3. (a) even

   (b) even

   (c) even

   (d) odd

   (e) odd

   (f) neither

4.



5.