

## PETA DOMAĆA ZADAĆA

5.1) Kolika sila djeluje na naboje  $-3 \cdot X \cdot 10^{-6}$  As i  $X \cdot 10^{-6}$  As koji su međusobno udaljeni za  $1 \cdot X$  mm u vakuumu? Da li je sila privlačna ili odbojna? Obrazložite.

5.2) Koliki je kapacitet pločastog kondenzatora površine  $4 \cdot X$  mm<sup>2</sup> razmaknutih  $X/3$  mm u sredstvu relativne dielektričnosti  $X$ ? Ako se spoji na napon od 50 V koliko će se naboja sakupiti na pločama tog kondenzatora i kolika će biti nakrcana energija?

5.3) Kondenzator kapaciteta  $X$  μF se puni preko otpornika od 10 kΩ izvorom napona od 500 V. Koliko će vremena trebati da napon na kondenzatoru naraste na 50 % vrijednosti izvora napajanja.

5.4) Izračunajte nadomjesni kapacitet kondenzatora između točkaka  $x$  i  $y$ ?

UPUTA: Rješavate ukupno 3 zadatka. Zadatke označite kao 5.4a), 5.4b) i 5.4c). Uz svaku sliku ide set podataka iz tablice sa istim brojem kao i slika. Stupac "PODACI" označava redak unutar tablice a ovisi o vašem rednom broju.

| Zadatak | 5.4 a |        | 5.4 b |        | 5.4 c |        |
|---------|-------|--------|-------|--------|-------|--------|
| R.br.   | Slika | Podaci | Slika | Podaci | Slika | Podaci |
| 1       | 5     | 1      | 1     | 1      | 3     | 1      |
| 2       |       | 2      |       | 2      |       | 2      |
| 3       |       | 3      |       | 3      |       | 3      |
| 4       |       | .      |       | .      |       | .      |
| 5       |       | .      |       | .      |       | .      |
| 6       |       | .      |       | .      |       | .      |
| 7       |       | .      |       | .      |       | .      |
| 8       |       | .      |       | .      |       | .      |
| 9       |       | .      |       | .      |       | .      |
| 10      |       | .      |       | .      |       | .      |
| 11      |       | .      |       | .      |       | .      |
| 12      |       | .      |       | .      |       | .      |
| 13      |       | .      |       | .      |       | .      |
| 14      |       | .      |       | .      |       | .      |
| 15      |       | .      |       | .      |       | .      |
| 16      |       | .      |       | .      |       | .      |
| 17      |       | .      |       | .      |       | .      |
| 18      |       | .      |       | .      |       | .      |
| 19      |       | .      |       | .      |       | .      |
| 20      |       | .      |       | .      |       | .      |
| 21      |       | .      |       | .      |       | .      |
| 22      |       | .      |       | .      |       | .      |
| 23      |       | .      |       | .      |       | .      |
| 24      |       | .      |       | .      |       | .      |
| 25      |       | .      |       | .      |       | .      |
| 26      |       | .      |       | .      |       | .      |
| 27      |       | .      |       | .      |       | .      |
| 28      |       | .      |       | .      |       | .      |
| 29      |       | .      |       | .      |       | .      |

|    |   |    |   |    |   |    |
|----|---|----|---|----|---|----|
| 30 |   | .  |   | .  |   | .  |
| 26 |   | .  |   | .  |   | .  |
| 27 |   | .  |   | .  |   | .  |
| 28 |   | .  |   | .  |   | .  |
| 29 |   | 29 |   | 29 |   | 29 |
| 30 |   | 30 |   | 30 |   | 30 |
| 31 | 6 | 1  | 2 | 1  | 4 | 1  |
| 32 |   | 2  |   | 2  |   | 2  |
| 33 |   | 3  |   | 3  |   | 3  |
| 34 |   | 4  |   | 4  |   | 4  |
| 35 |   | 5  |   | 5  |   | 5  |
| 36 |   | 6  |   | 6  |   | 6  |
| 37 |   | 7  |   | 7  |   | 7  |
| 38 |   | 8  |   | 8  |   | 8  |
| 39 |   | 9  |   | 9  |   | 9  |
| 40 |   | 10 |   | 10 |   | 10 |
| 41 |   | 11 |   | 11 |   | 11 |
| 42 |   | 12 |   | 12 |   | 12 |
| 43 |   | 13 |   | 13 |   | 13 |
| 44 |   | 14 |   | 14 |   | 14 |
| 45 |   | 15 |   | 15 |   | 15 |
| 46 |   | 16 |   | 16 |   | 16 |
| 47 |   | 17 |   | 17 |   | 17 |
| 48 |   | 18 |   | 18 |   | 18 |
| 49 |   | 19 |   | 19 |   | 19 |
| 50 |   | 20 |   | 20 |   | 20 |
| 51 |   | 21 |   | 21 |   | 21 |
| 52 |   | 22 |   | 22 |   | 22 |
| 53 |   | 23 |   | 23 |   | 23 |
| 54 |   | 24 |   | 24 |   | 24 |
| 55 |   | 25 |   | 25 |   | 25 |
| 56 |   | 26 |   | 26 |   | 26 |
| 57 |   | 27 |   | 27 |   | 27 |
| 58 |   | 28 |   | 28 |   | 28 |
| 59 |   | 29 |   | 29 |   | 29 |
| 60 |   | 30 |   | 30 |   | 30 |

Tablica 1.:

|    | C1<br>(F) | C2<br>(F) | C3<br>(F) | C4<br>(F) | C5<br>(F) | C6<br>(F) |
|----|-----------|-----------|-----------|-----------|-----------|-----------|
| 1  | 3         | 2         | 2         | 2         | 9         | 3         |
| 2  | 1         | 1         | 2         | 4         | 10        | 3         |
| 3  | 1         | 3         | 10        | 9         | 5         | 9         |
| 4  | 1         | 6         | 2         | 6         | 10        | 2         |
| 5  | 1         | 9         | 1         | 3         | 3         | 2         |
| 6  | 1         | 7         | 10        | 9         | 3         | 5         |
| 7  | 1         | 6         | 6         | 5         | 10        | 9         |
| 8  | 1         | 9         | 5         | 5         | 6         | 8         |
| 9  | 5         | 1         | 6         | 6         | 4         | 10        |
| 10 | 2         | 5         | 8         | 7         | 7         | 3         |
| 11 | 5         | 1         | 7         | 7         | 8         | 10        |
| 12 | 2         | 1         | 8         | 4         | 5         | 6         |
| 13 | 2         | 1         | 4         | 4         | 10        | 2         |
| 14 | 2         | 1         | 4         | 3         | 3         | 9         |
| 15 | 2         | 1         | 5         | 2         | 8         | 8         |
| 16 | 2         | 4         | 4         | 5         | 5         | 2         |
| 17 | 4         | 1         | 2         | 1         | 4         | 8         |
| 18 | 2         | 4         | 3         | 2         | 6         | 2         |
| 19 | 3         | 1         | 6         | 6         | 9         | 8         |
| 20 | 3         | 1         | 9         | 10        | 9         | 3         |
| 21 | 7         | 1         | 9         | 4         | 5         | 2         |
| 22 | 3         | 1         | 2         | 5         | 4         | 8         |
| 23 | 3         | 1         | 7         | 3         | 2         | 1         |
| 24 | 3         | 4         | 7         | 5         | 6         | 3         |
| 25 | 4         | 1         | 5         | 7         | 2         | 2         |
| 26 | 3         | 4         | 2         | 3         | 5         | 6         |
| 27 | 4         | 1         | 6         | 4         | 6         | 8         |
| 28 | 4         | 1         | 3         | 5         | 10        | 8         |
| 29 | 4         | 1         | 8         | 9         | 4         | 4         |
| 30 | 4         | 1         | 7         | 5         | 9         | 7         |

Tablica 2.:

|    | C1<br>(F) | C2<br>(F) | C3<br>(F) | C4<br>(F) | C5<br>(F) | C6<br>(F) | C7<br>(F) | C8<br>(F) |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1  | 1         | 10        | 8         | 4         | 6         | 8         | 7         | 6         |
| 2  | 2         | 4         | 6         | 8         | 5         | 1         | 7         | 9         |
| 3  | 3         | 6         | 1         | 10        | 7         | 1         | 1         | 3         |
| 4  | 4         | 1         | 1         | 5         | 9         | 8         | 1         | 1         |
| 5  | 5         | 7         | 3         | 6         | 10        | 1         | 8         | 7         |
| 6  | 1         | 3         | 9         | 6         | 5         | 9         | 7         | 4         |
| 7  | 2         | 3         | 10        | 8         | 5         | 7         | 1         | 7         |
| 8  | 1         | 8         | 8         | 10        | 8         | 2         | 1         | 8         |
| 9  | 1         | 4         | 5         | 10        | 9         | 6         | 9         | 8         |
| 10 | 1         | 6         | 2         | 1         | 10        | 8         | 3         | 9         |
| 11 | 1         | 1         | 1         | 7         | 6         | 4         | 9         | 10        |
| 12 | 1         | 5         | 8         | 4         | 5         | 3         | 10        | 6         |
| 13 | 4         | 10        | 4         | 8         | 2         | 1         | 7         | 3         |
| 14 | 5         | 6         | 2         | 8         | 6         | 10        | 7         | 1         |
| 15 | 2         | 4         | 9         | 8         | 6         | 10        | 1         | 1         |
| 16 | 3         | 5         | 1         | 8         | 4         | 1         | 6         | 4         |
| 17 | 7         | 4         | 3         | 3         | 2         | 1         | 8         | 2         |
| 18 | 4         | 7         | 9         | 9         | 5         | 3         | 5         | 7         |
| 19 | 5         | 3         | 6         | 6         | 2         | 7         | 7         | 9         |
| 20 | 10        | 9         | 10        | 1         | 4         | 5         | 1         | 5         |
| 21 | 20        | 8         | 9         | 9         | 8         | 10        | 8         | 4         |
| 22 | 10        | 3         | 6         | 10        | 6         | 10        | 10        | 5         |
| 23 | 15        | 6         | 5         | 5         | 8         | 8         | 7         | 7         |
| 24 | 10        | 2         | 5         | 7         | 5         | 1         | 4         | 4         |
| 25 | 5         | 3         | 10        | 6         | 10        | 9         | 1         | 9         |
| 26 | 5         | 8         | 6         | 9         | 8         | 2         | 5         | 6         |
| 27 | 5         | 8         | 7         | 7         | 3         | 4         | 8         | 6         |
| 28 | 5         | 4         | 10        | 6         | 6         | 6         | 1         | 9         |
| 29 | 2         | 3         | 3         | 5         | 3         | 3         | 9         | 8         |
| 30 | 5         | 10        | 4         | 7         | 6         | 7         | 8         | 3         |

Tablica 3.:

|    | C1<br>(F) | C2<br>(F) | C3<br>(F) | C4<br>(F) | C5<br>(F) | C6<br>(F) | C7<br>(F) |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1  | 16        | 17        | 4         | 19        | 5         | 13        | 18        |
| 2  | 12        | 16        | 15        | 7         | 18        | 7         | 10        |
| 3  | 14        | 9         | 10        | 8         | 11        | 15        | 4         |
| 4  | 7         | 20        | 9         | 6         | 9         | 9         | 1         |
| 5  | 14        | 5         | 18        | 20        | 4         | 9         | 9         |
| 6  | 7         | 16        | 8         | 19        | 13        | 5         | 16        |
| 7  | 16        | 15        | 6         | 13        | 3         | 7         | 7         |
| 8  | 14        | 4         | 2         | 7         | 8         | 9         | 10        |
| 9  | 6         | 3         | 3         | 1         | 8         | 16        | 19        |
| 10 | 1         | 3         | 15        | 13        | 5         | 12        | 18        |
| 11 | 20        | 5         | 17        | 14        | 3         | 17        | 7         |
| 12 | 1         | 10        | 20        | 15        | 8         | 13        | 11        |
| 13 | 4         | 16        | 6         | 15        | 4         | 4         | 10        |
| 14 | 7         | 18        | 4         | 9         | 2         | 20        | 16        |
| 15 | 10        | 3         | 20        | 16        | 20        | 14        | 13        |
| 16 | 8         | 14        | 7         | 5         | 5         | 2         | 20        |
| 17 | 4         | 4         | 14        | 11        | 5         | 1         | 15        |
| 18 | 17        | 9         | 20        | 18        | 5         | 11        | 1         |
| 19 | 11        | 18        | 9         | 6         | 5         | 4         | 15        |
| 20 | 5         | 12        | 12        | 1         | 1         | 2         | 18        |
| 21 | 1         | 3         | 11        | 18        | 19        | 19        | 18        |
| 22 | 16        | 2         | 13        | 13        | 15        | 17        | 6         |
| 23 | 8         | 12        | 11        | 20        | 18        | 20        | 15        |
| 24 | 15        | 8         | 16        | 2         | 1         | 4         | 13        |
| 25 | 2         | 8         | 9         | 7         | 4         | 1         | 11        |
| 26 | 2         | 17        | 18        | 17        | 16        | 9         | 7         |
| 27 | 8         | 7         | 9         | 3         | 3         | 11        | 3         |
| 28 | 1         | 16        | 6         | 20        | 20        | 12        | 2         |
| 29 | 13        | 10        | 1         | 11        | 7         | 5         | 5         |
| 30 | 5         | 18        | 3         | 2         | 4         | 3         | 5         |

Tablica 4.:

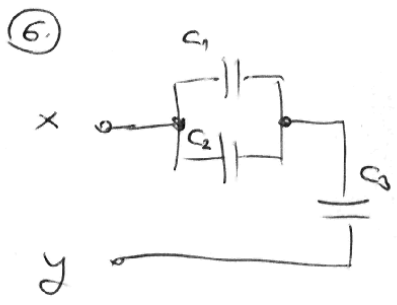
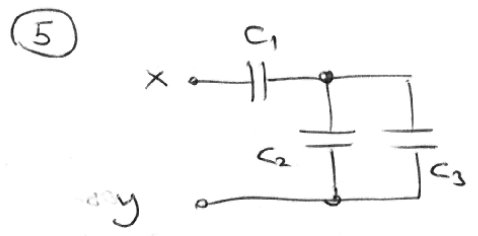
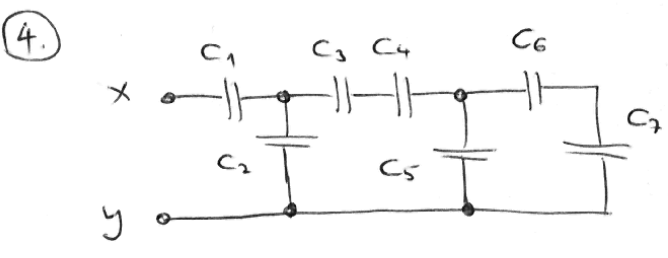
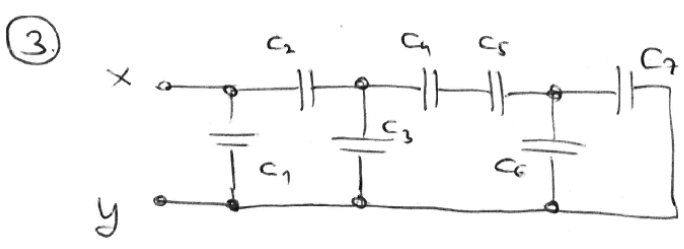
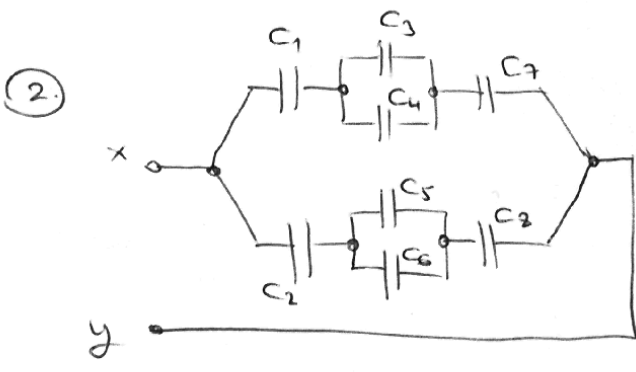
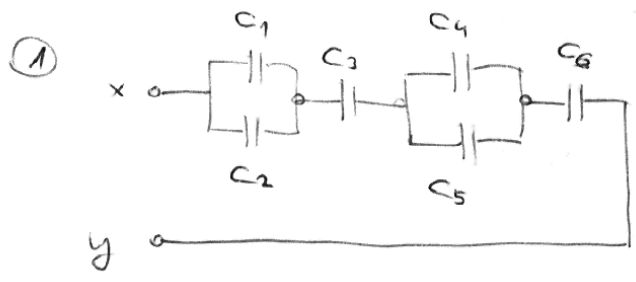
|    | C1<br>(F) | C2<br>(F) | C3<br>(F) | C4<br>(F) | C5<br>(F) | C6<br>(F) | C7<br>(F) |
|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1  | 1         | 4         | 1         | 1         | 1         | 2         | 8         |
| 2  | 2         | 1         | 2         | 2         | 2         | 2         | 8         |
| 3  | 2         | 4         | 1         | 3         | 3         | 2         | 8         |
| 4  | 1         | 4         | 4         | 1         | 4         | 2         | 8         |
| 5  | 8         | 4         | 5         | 5         | 1         | 3         | 8         |
| 6  | 8         | 4         | 1         | 2         | 1         | 1         | 8         |
| 7  | 8         | 4         | 2         | 1         | 2         | 2         | 1         |
| 8  | 8         | 4         | 1         | 2         | 1         | 1         | 8         |
| 9  | 8         | 4         | 1         | 1         | 1         | 2         | 8         |
| 10 | 8         | 4         | 1         | 1         | 1         | 3         | 8         |
| 11 | 8         | 4         | 1         | 3         | 1         | 3         | 8         |
| 12 | 8         | 1         | 1         | 4         | 1         | 3         | 8         |
| 13 | 1         | 4         | 4         | 1         | 4         | 3         | 8         |
| 14 | 8         | 1         | 5         | 1         | 5         | 5         | 8         |
| 15 | 8         | 4         | 1         | 6         | 2         | 5         | 8         |
| 16 | 16        | 4         | 3         | 1         | 3         | 5         | 8         |
| 17 | 16        | 4         | 7         | 3         | 1         | 5         | 8         |
| 18 | 16        | 4         | 4         | 5         | 4         | 1         | 8         |
| 19 | 16        | 4         | 4         | 4         | 5         | 8         | 1         |
| 20 | 16        | 4         | 10        | 10        | 10        | 1         | 8         |
| 21 | 16        | 4         | 20        | 20        | 1         | 8         | 8         |
| 22 | 16        | 4         | 10        | 1         | 10        | 10        | 8         |
| 23 | 16        | 4         | 1         | 15        | 15        | 1         | 8         |
| 24 | 16        | 1         | 10        | 15        | 10        | 1         | 8         |
| 25 | 1         | 4         | 6         | 5         | 5         | 1         | 8         |
| 26 | 16        | 1         | 4         | 6         | 6         | 20        | 8         |
| 27 | 16        | 4         | 1         | 5         | 6         | 5         | 8         |
| 28 | 16        | 4         | 2         | 1         | 2         | 6         | 8         |
| 29 | 16        | 4         | 1         | 4         | 1         | 1         | 8         |
| 30 | 32        | 4         | 5         | 5         | 3         | 1         | 8         |

Tablica 5.:

|    | C1<br>(F) | C2<br>(F) | C3<br>(F) |
|----|-----------|-----------|-----------|
| 1  | 5         | 2         | 9         |
| 2  | 1         | 5         | 9         |
| 3  | 1         | 2         | 5         |
| 4  | 1         | 5         | 9         |
| 5  | 5         | 3         | 9         |
| 6  | 1         | 5         | 9         |
| 7  | 1         | 3         | 5         |
| 8  | 1         | 5         | 9         |
| 9  | 5         | 3         | 9         |
| 10 | 2         | 6         | 9         |
| 11 | 2         | 4         | 5         |
| 12 | 2         | 5         | 9         |
| 13 | 5         | 4         | 9         |
| 14 | 2         | 5         | 9         |
| 15 | 2         | 5         | 5         |
| 16 | 2         | 5         | 9         |
| 17 | 5         | 5         | 9         |
| 18 | 2         | 5         | 9         |
| 19 | 3         | 6         | 5         |
| 20 | 3         | 5         | 9         |
| 21 | 5         | 6         | 9         |
| 22 | 3         | 5         | 9         |
| 23 | 3         | 7         | 5         |
| 24 | 3         | 5         | 9         |
| 25 | 5         | 7         | 9         |
| 26 | 3         | 5         | 9         |
| 27 | 4         | 2         | 5         |
| 28 | 4         | 5         | 9         |
| 29 | 5         | 2         | 9         |
| 30 | 2         | 5         | 9         |

Tablica 6.:

|    | C1<br>(F) | C2<br>(F) | C3<br>(F) |
|----|-----------|-----------|-----------|
| 1  | 4         | 7         | 6         |
| 2  | 11        | 7         | 15        |
| 3  | 2         | 15        | 8         |
| 4  | 3         | 5         | 12        |
| 5  | 3         | 5         | 7         |
| 6  | 9         | 15        | 3         |
| 7  | 14        | 11        | 12        |
| 8  | 3         | 13        | 5         |
| 9  | 6         | 6         | 8         |
| 10 | 6         | 13        | 6         |
| 11 | 1         | 15        | 12        |
| 12 | 8         | 7         | 2         |
| 13 | 4         | 14        | 5         |
| 14 | 12        | 1         | 3         |
| 15 | 6         | 11        | 3         |
| 16 | 3         | 13        | 8         |
| 17 | 11        | 10        | 2         |
| 18 | 7         | 15        | 1         |
| 19 | 10        | 8         | 5         |
| 20 | 8         | 6         | 11        |
| 21 | 4         | 6         | 8         |
| 22 | 11        | 1         | 1         |
| 23 | 1         | 14        | 11        |
| 24 | 1         | 6         | 1         |
| 25 | 12        | 15        | 10        |
| 26 | 3         | 8         | 7         |
| 27 | 9         | 9         | 4         |
| 28 | 3         | 3         | 13        |
| 29 | 15        | 8         | 2         |
| 30 | 6         | 11        | 3         |



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