

*Geautomatiseerde rekenkennis kun je voorstellen als een netwerk van met elkaar verbonden kennis in het langetermijngeheugen. “Rekenfeiten” staan niet los van elkaar, maar zijn gekoppeld aan andere sommen, strategieën en getalrelaties. Wanneer een leerling een som ziet, worden deze verbindingen razendsnel geactiveerd, waardoor het antwoord snel en moeiteloos kan worden gevonden. De opbouw van dit netwerk begint al met rijke ervaringen voorafgaand aan de kleuterjaren. In de kleuterklas bouw je hierop verder met allerlei activiteiten. **Tip: lees eerst “stop met stampen, start met automatiseren!”***

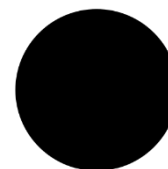
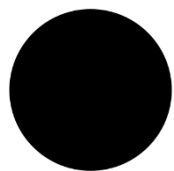
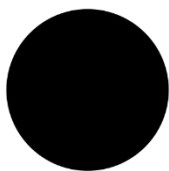
Het materiaal in dit document kun je (in de kleuterklas) inzetten om de zogenoemde *verdertelsommen* te automatiseren. Dit zijn optelsituaties waarbij leerlingen niet beide hoeveelheden één voor één tellen, maar starten bij één getal en daar verder op tellen.

Het materiaal ondersteunt dit proces op een visuele en gestructureerde manier. Op elke kaart zie je een som en twee sets stippen. Deze stippen zijn zo geordend dat ze conceptueel subitieren uitlokken. Vanuit deze herkenning worden leerlingen uitgenodigd om de som op te lossen door verder te tellen. *Wanneer leerlingen dit niet spontaan doen, kún je hen impliciet stimuleren om te starten bij het grootste aantal en daar verder bij te tellen. Je kan het ook expliciteren met instructie.*

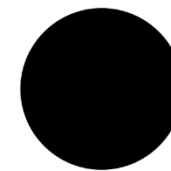
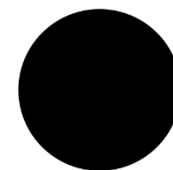
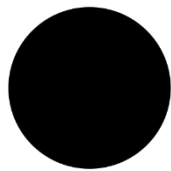
Op de achterzijde van elke kaart staat dezelfde optelling, maar in omgekeerde volgorde. Hierdoor maken leerlingen kennis met de commutatieve eigenschap: het inzicht dat de volgorde van de getallen geen invloed heeft op de uitkomst. Dit kun je als leerkracht expliciet benoemen, maar je kunt het ook laten ontstaan door leerlingen zelf patronen te laten ontdekken.

*Deze activiteit is gebaseerd op een voorbeeld uit het hoofdstuk “Basis facts, mental computation and algorithms” uit [“Teaching Mathematics in Primary Schools”](#) van Robyn Jorgensen, Shelley Dole en Kevin Larkin.*

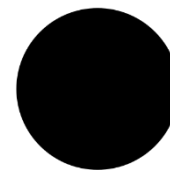
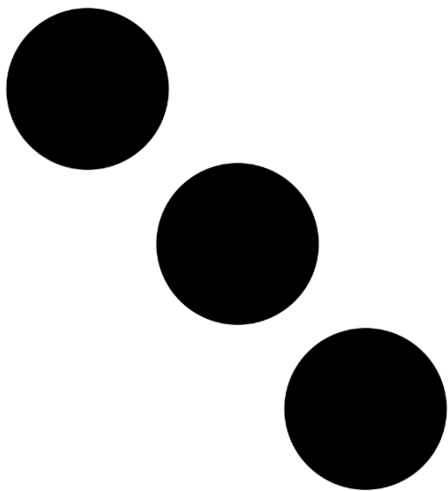
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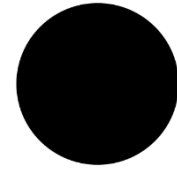
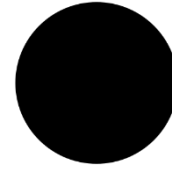
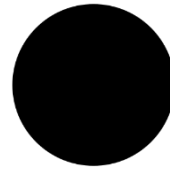
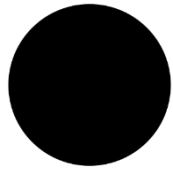
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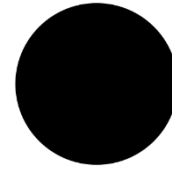
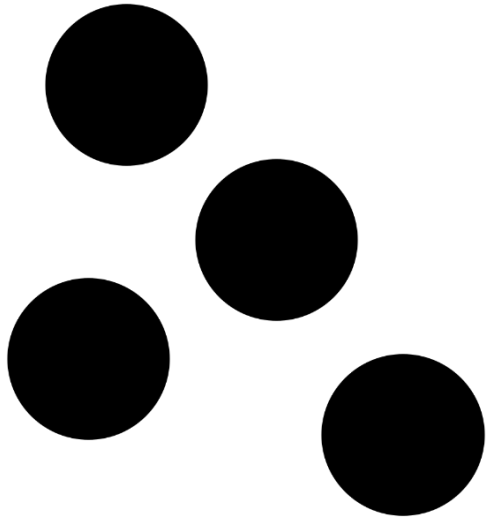
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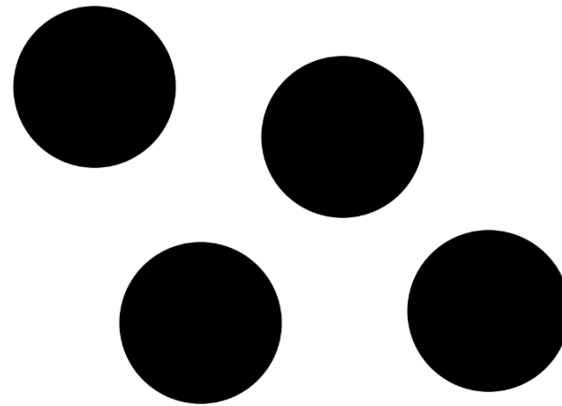
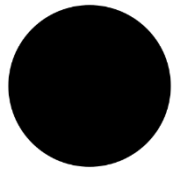
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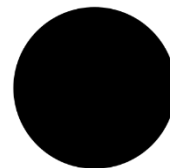
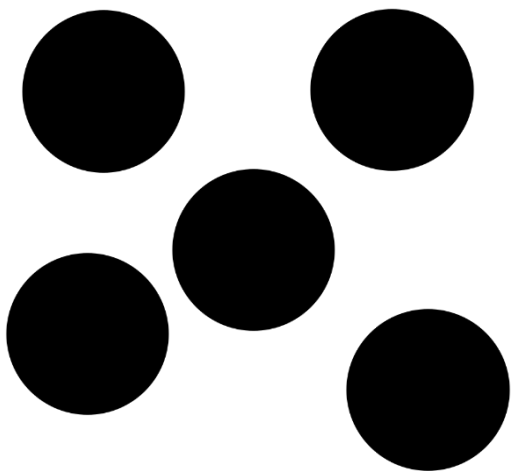
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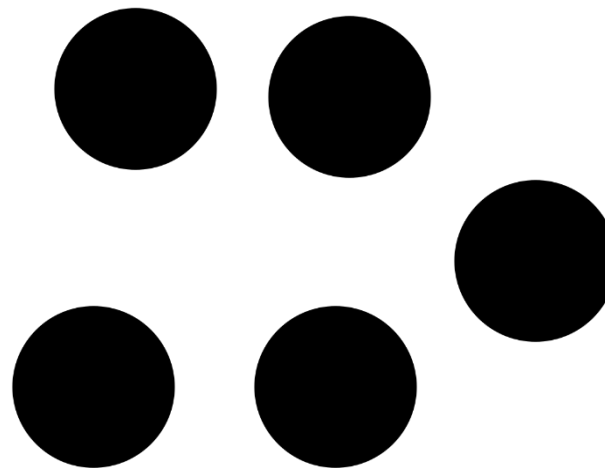
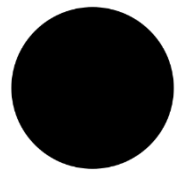
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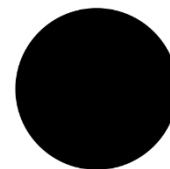
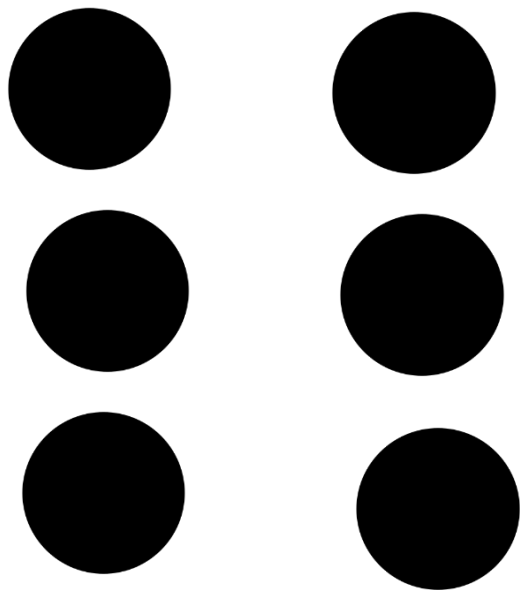
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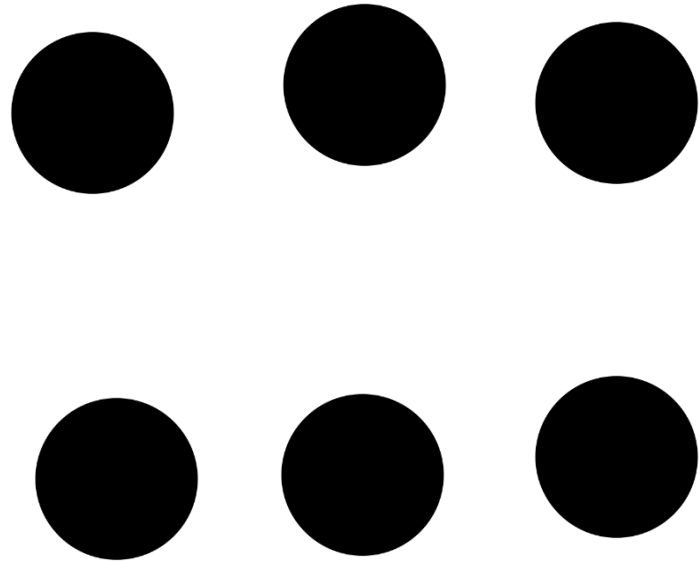
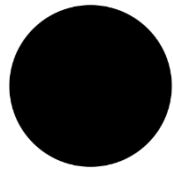
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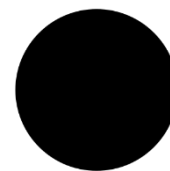
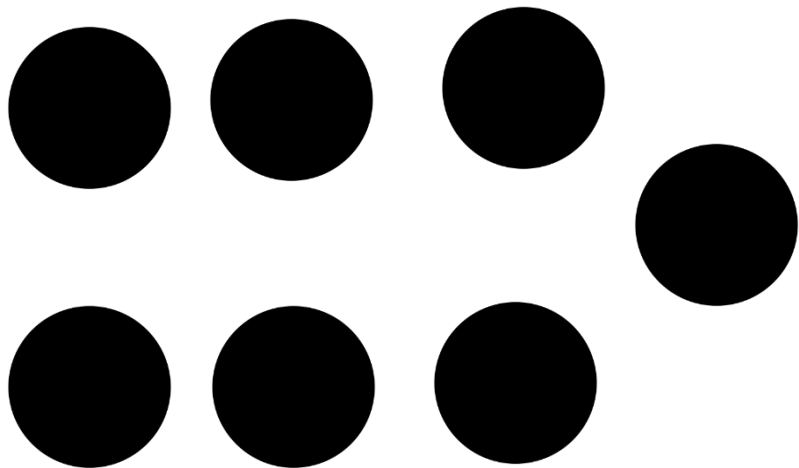
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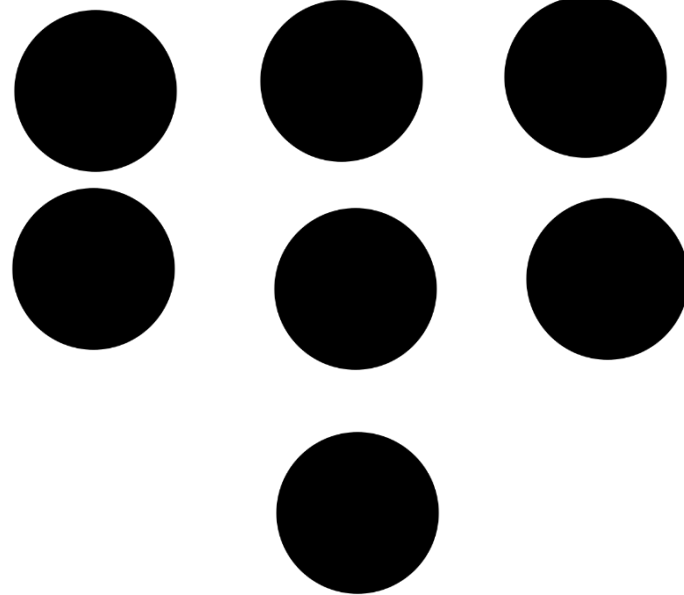
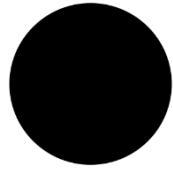
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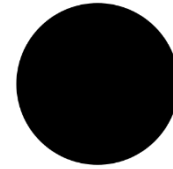
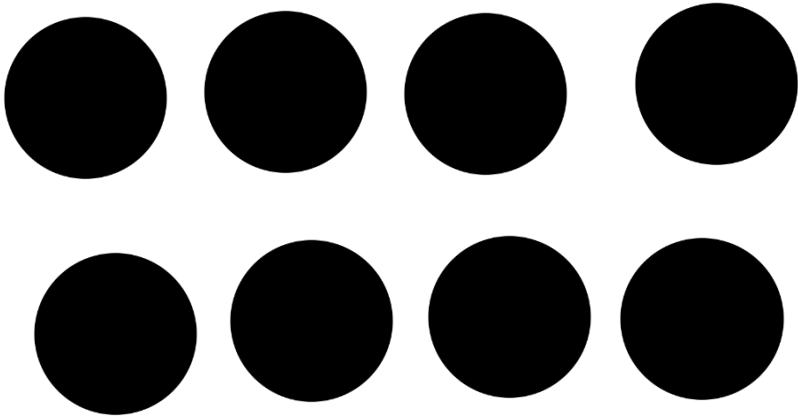
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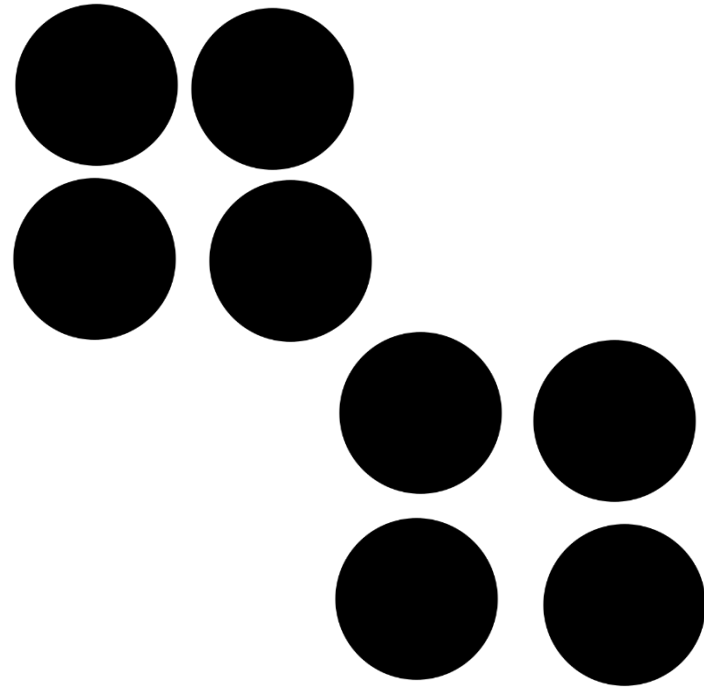
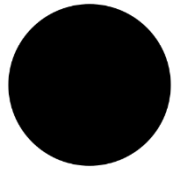
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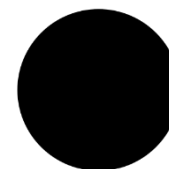
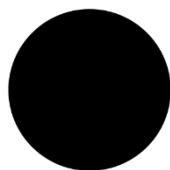
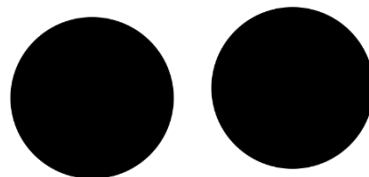
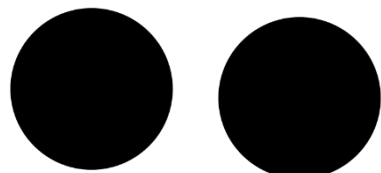
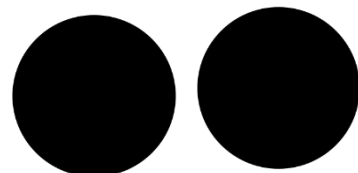
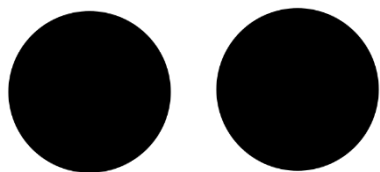
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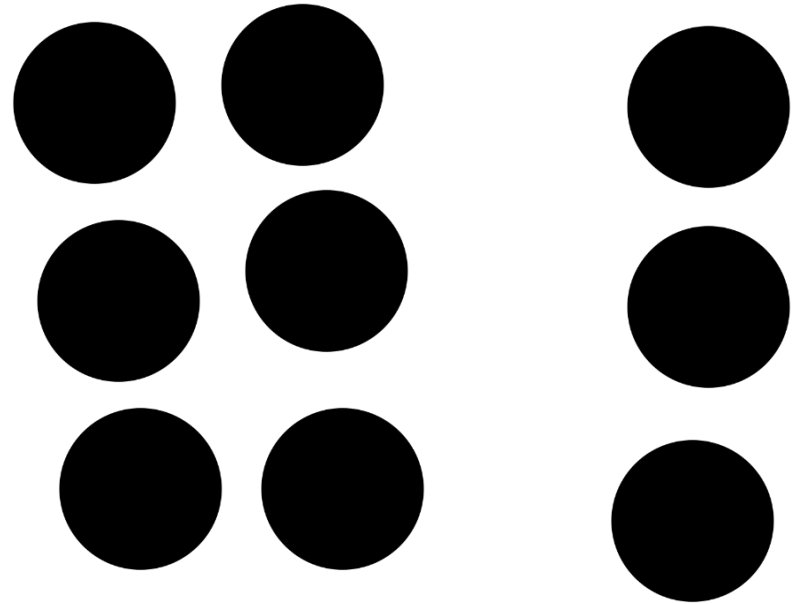
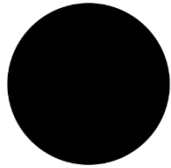
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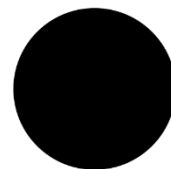
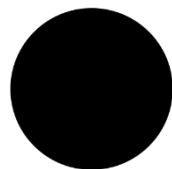
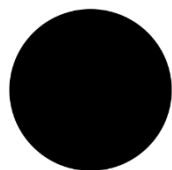
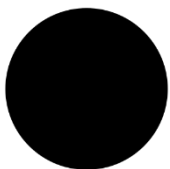
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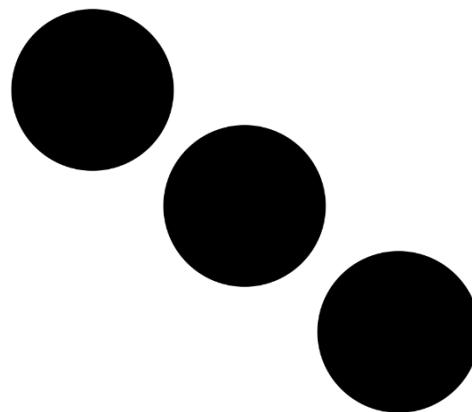
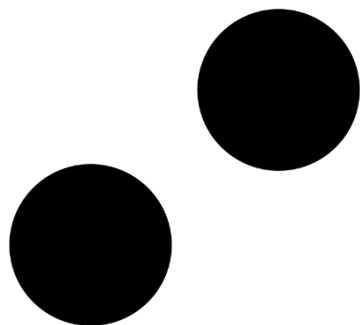
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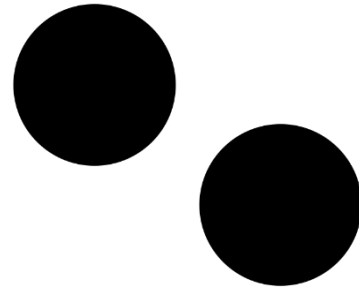
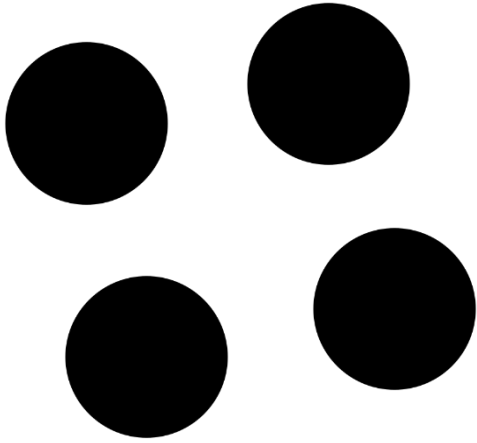
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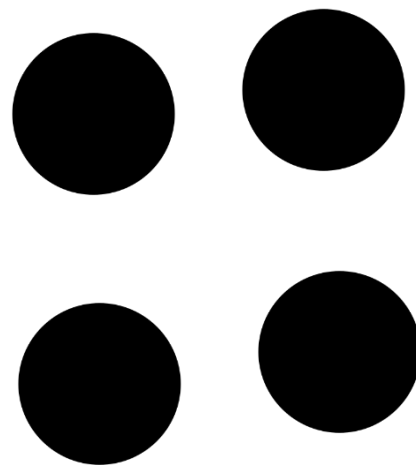
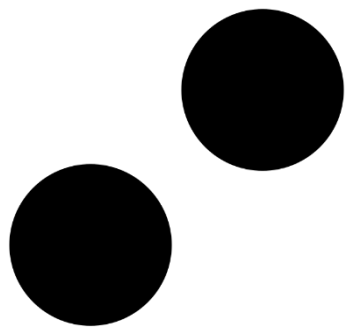
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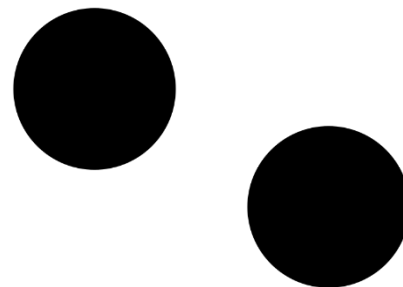
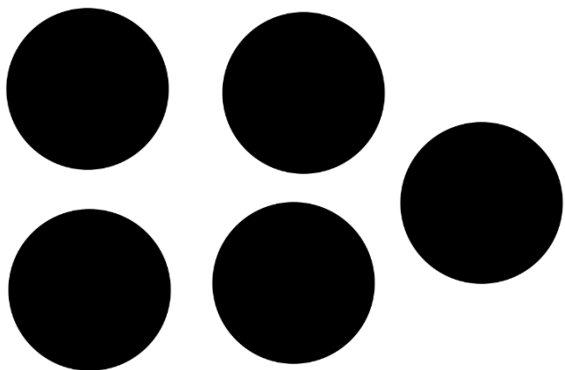
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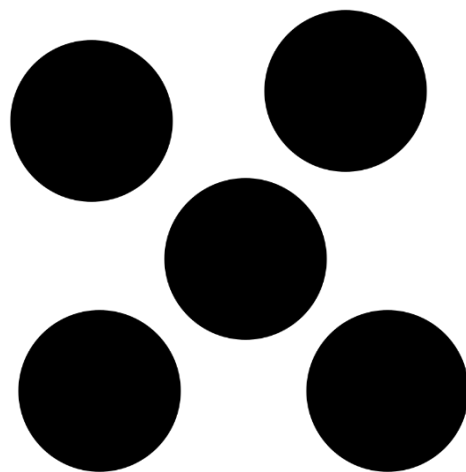
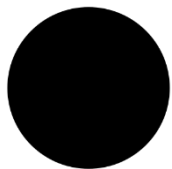
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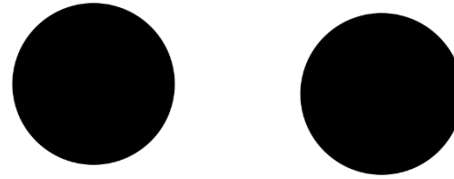
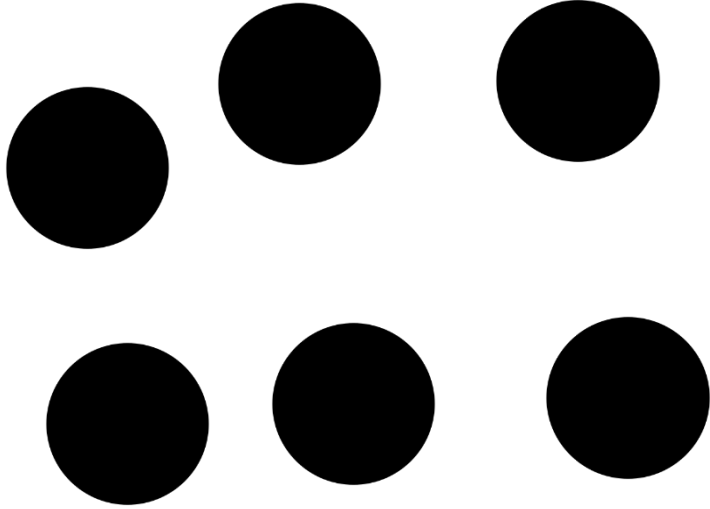
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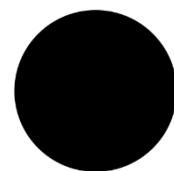
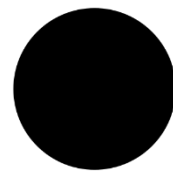
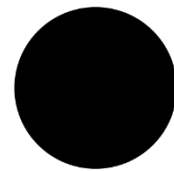
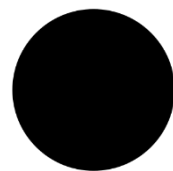
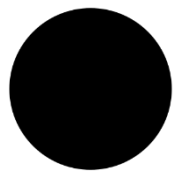
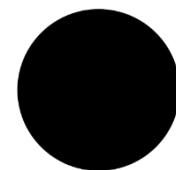
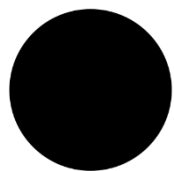
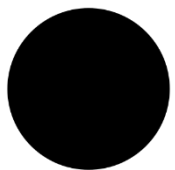
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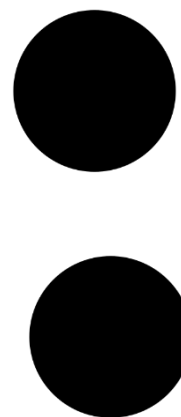
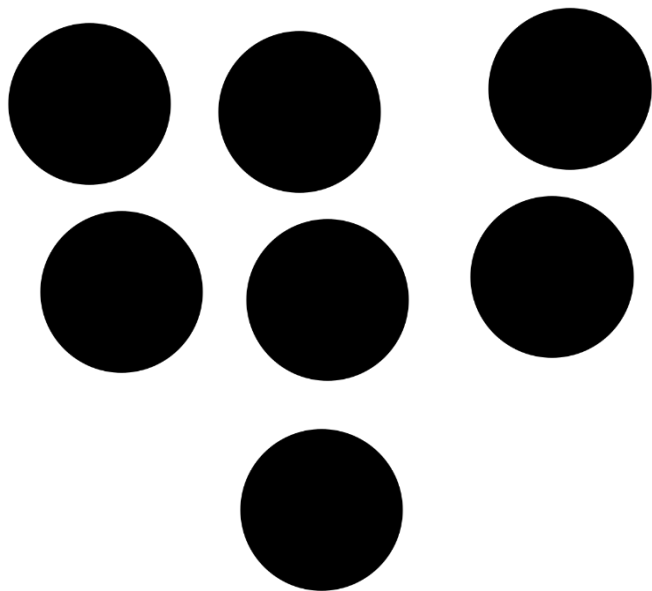
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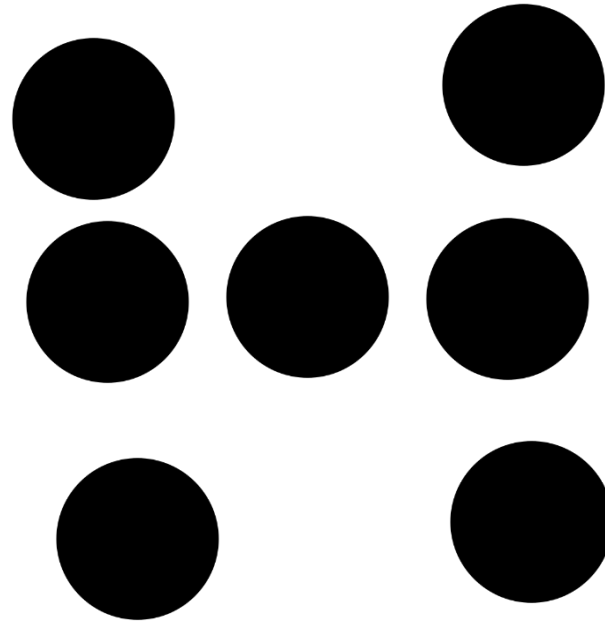
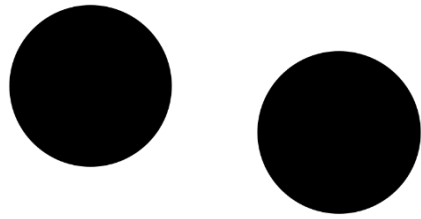
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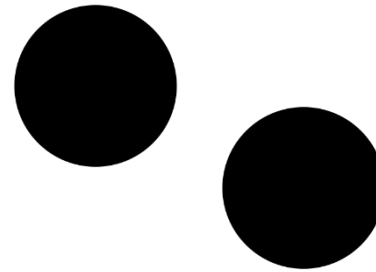
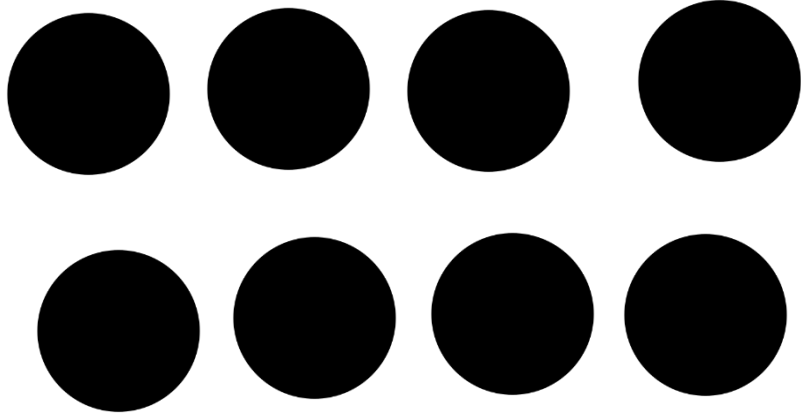
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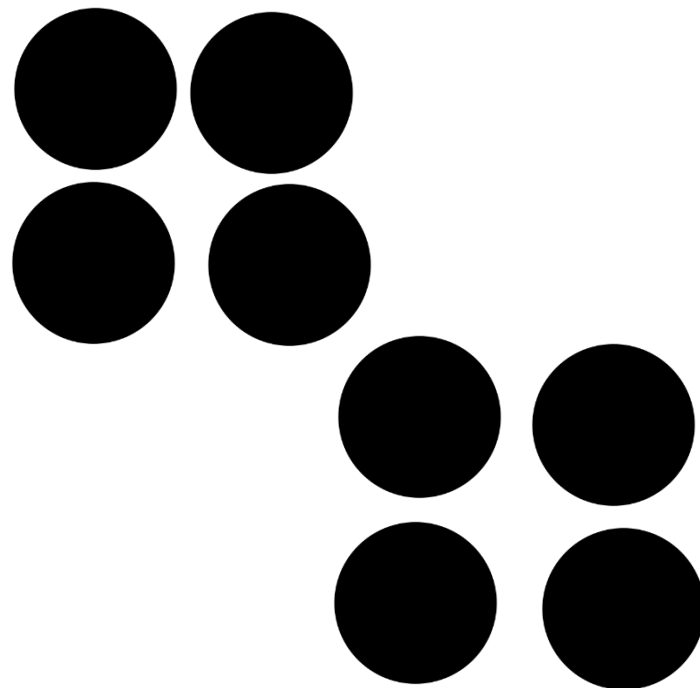
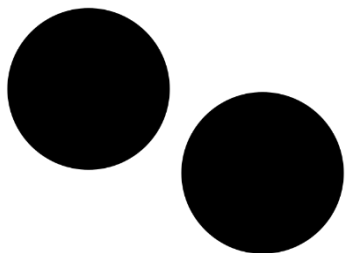
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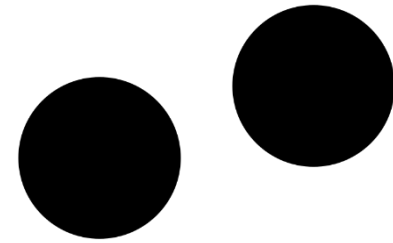
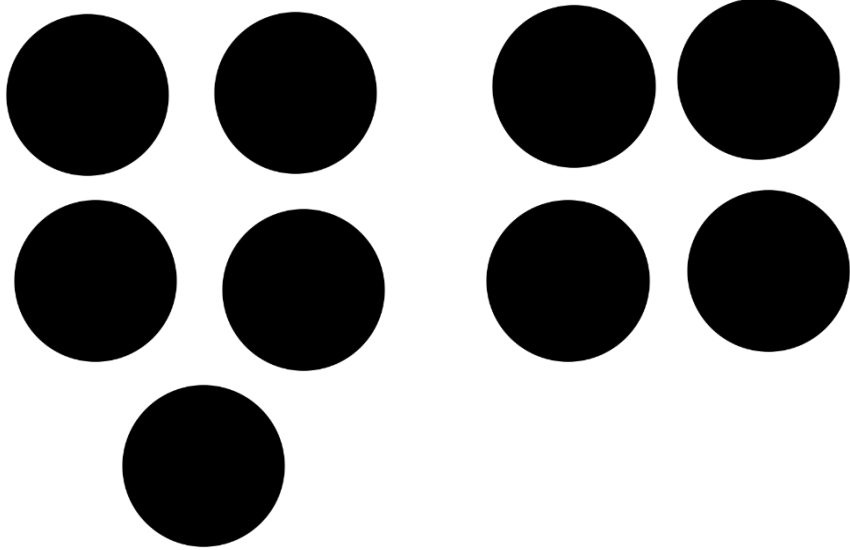
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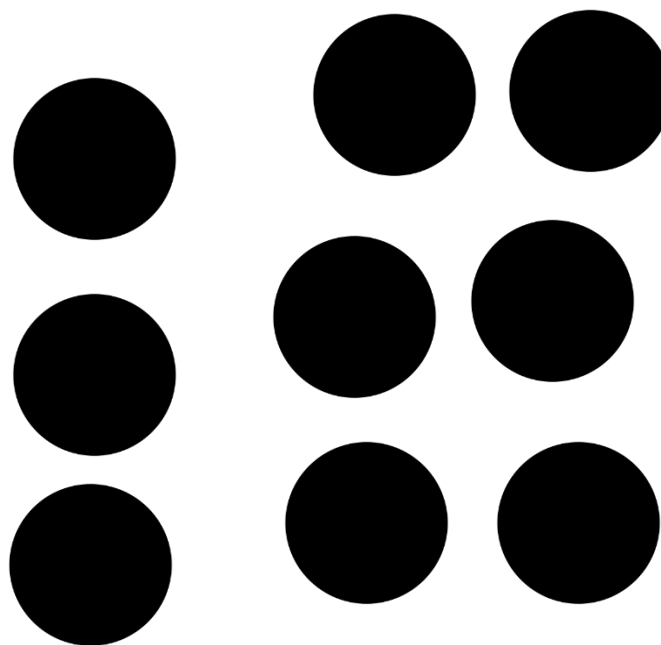
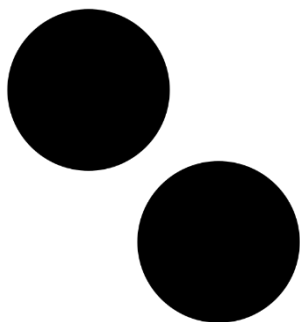
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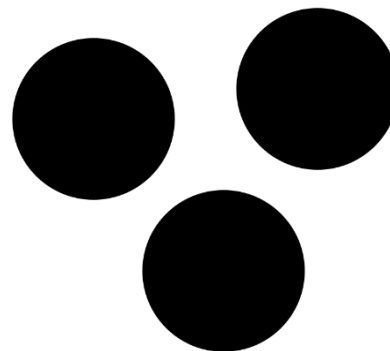
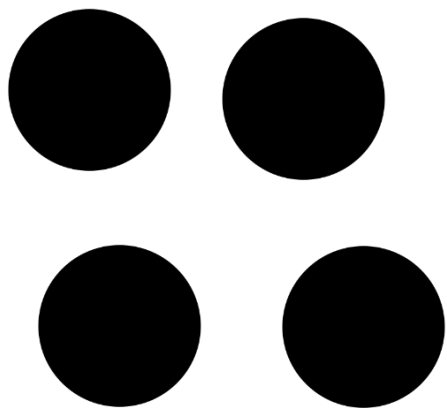
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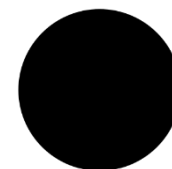
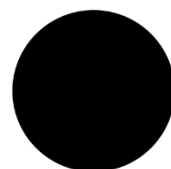
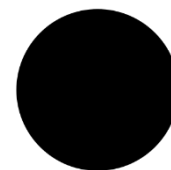
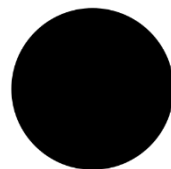
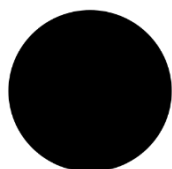
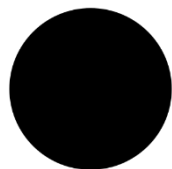
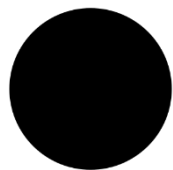
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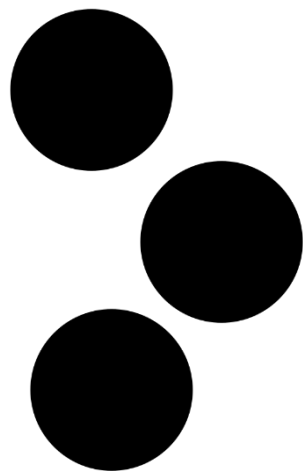
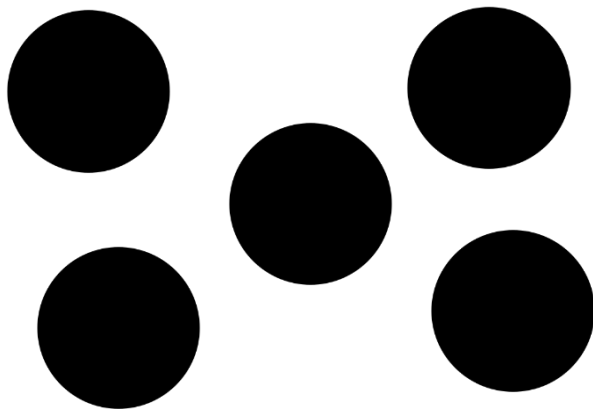
$$4 + 3 =$$



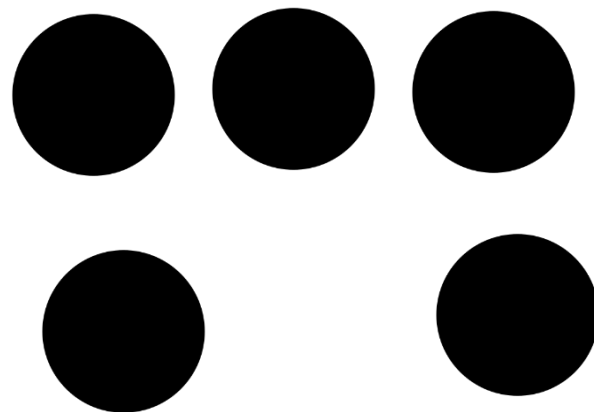
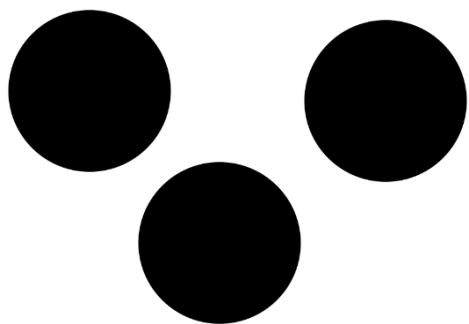
$$3 + 4 =$$



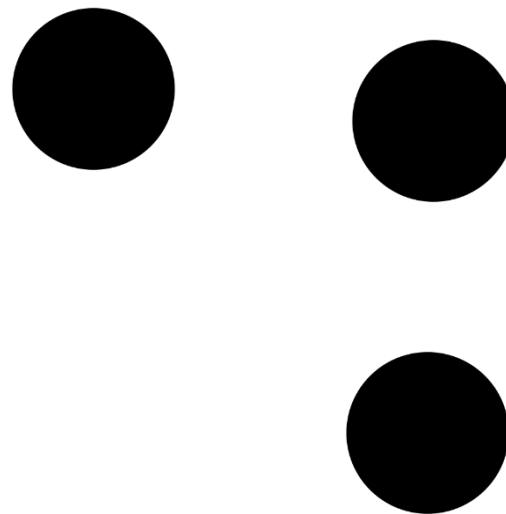
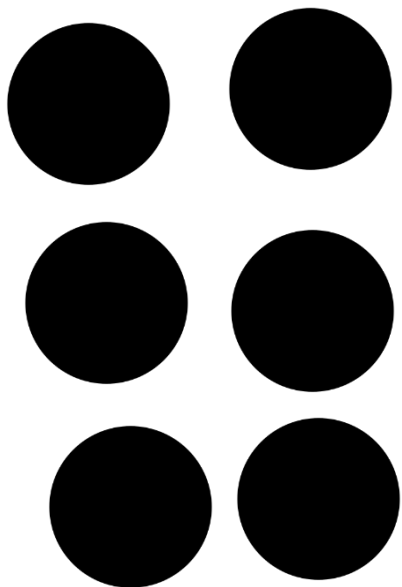
$$5 + 3 =$$



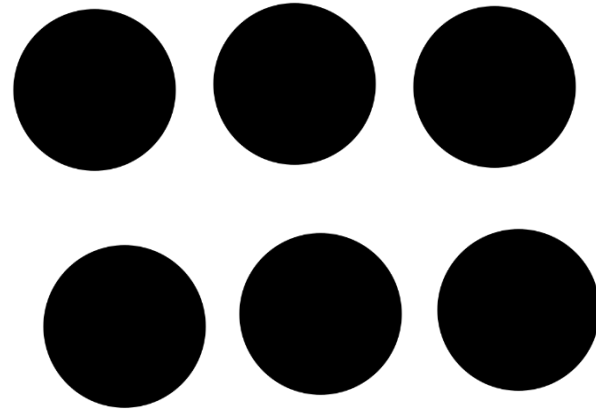
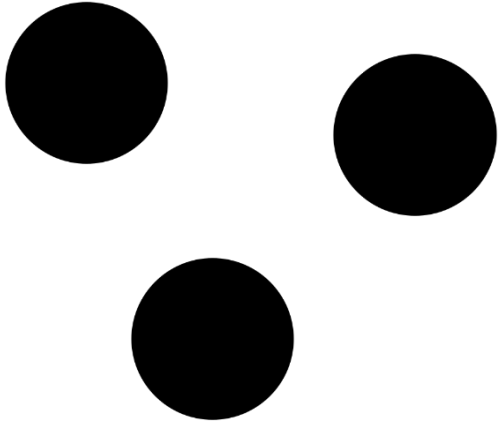
$$3 + 5 =$$



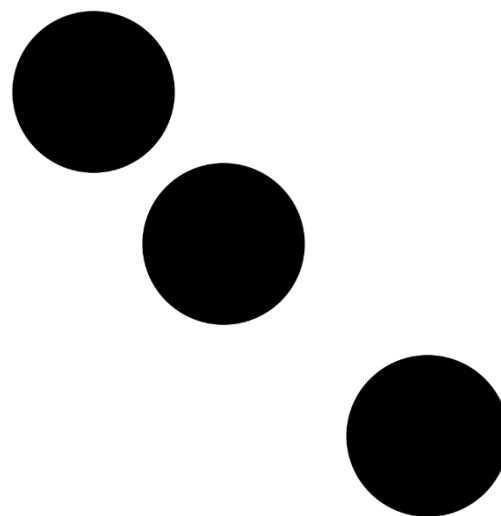
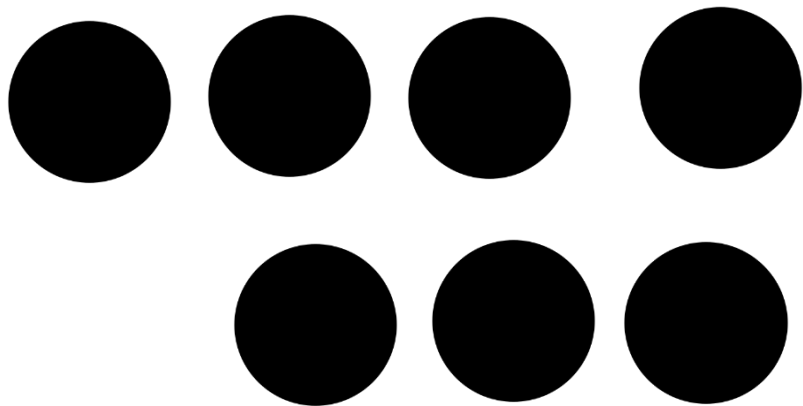
$$6 + 3 =$$



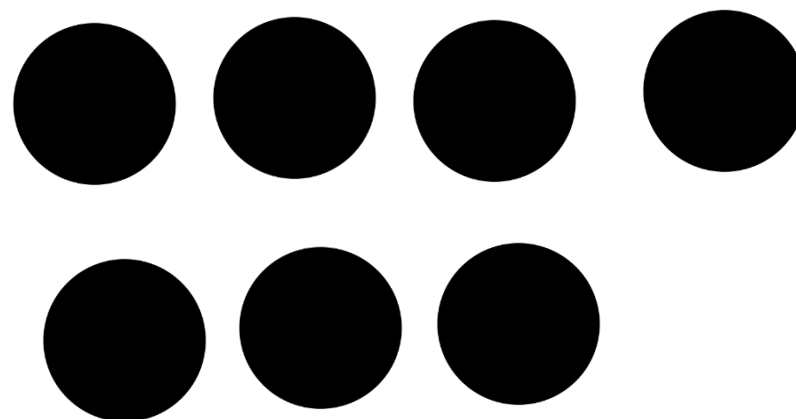
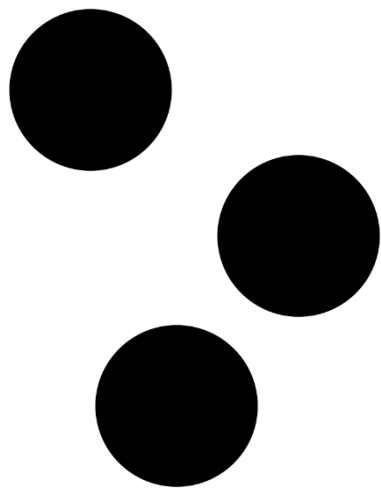
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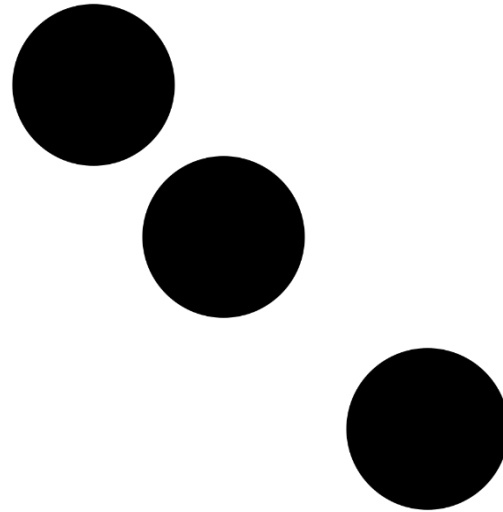
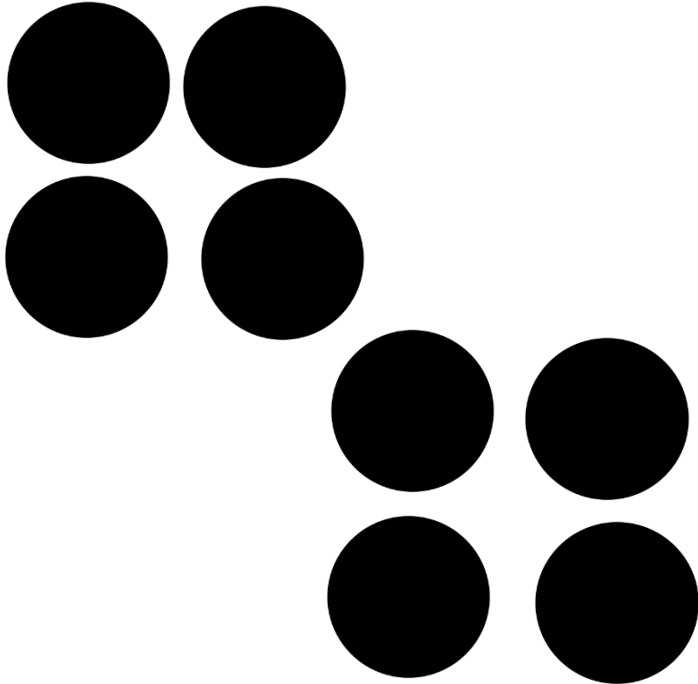
$$7 + 3 =$$



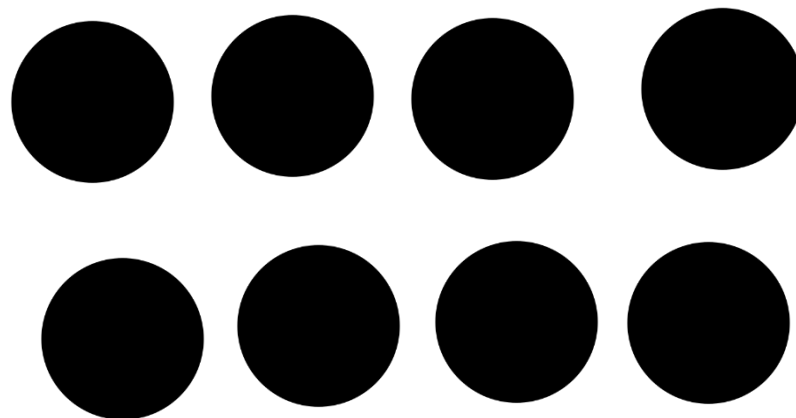
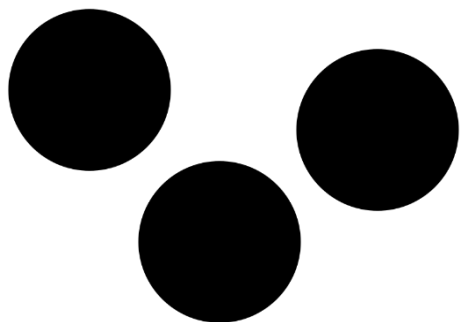
$$3 + 7 =$$



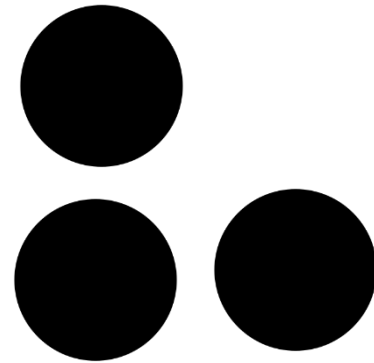
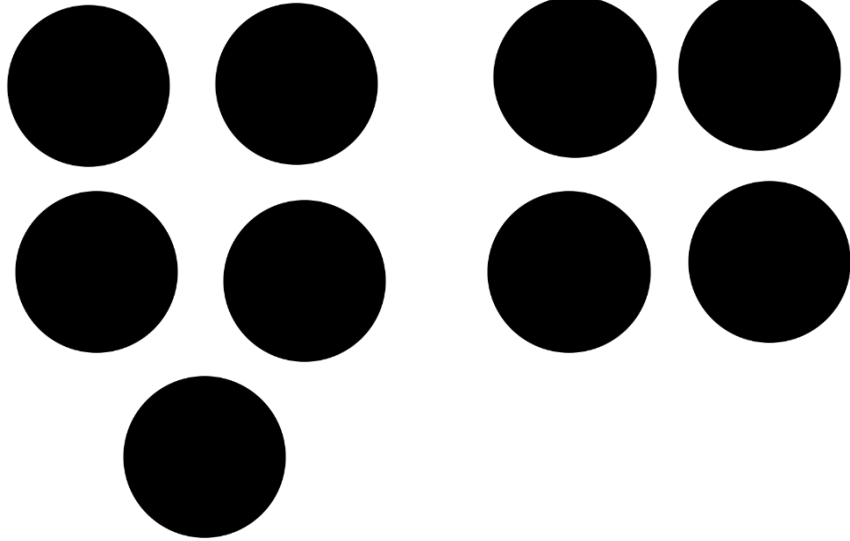
$$8 + 3 =$$



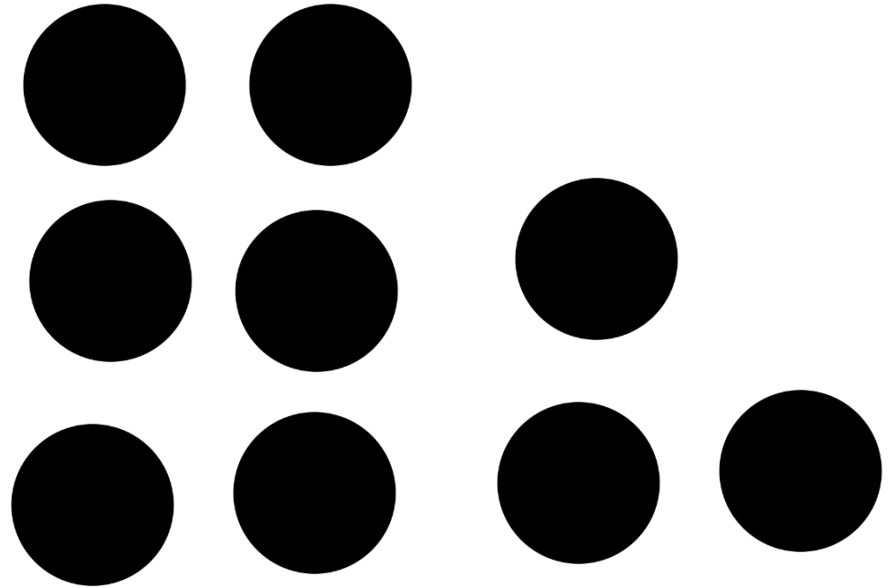
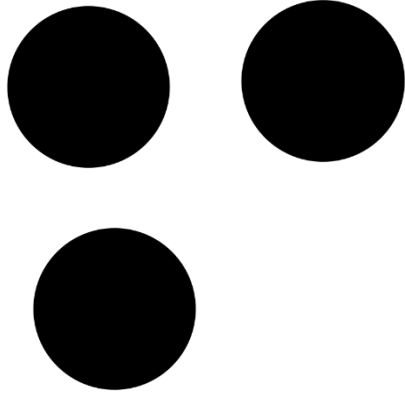
$$3 + 8 =$$



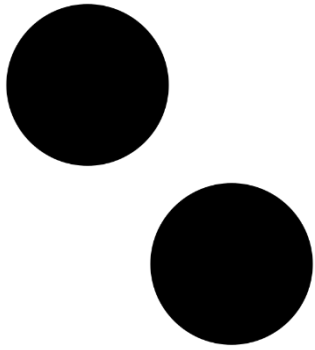
$$9 + 3 =$$



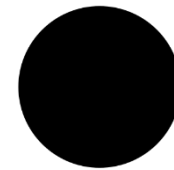
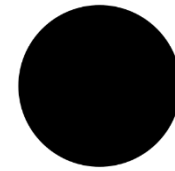
$$3 + 9 =$$



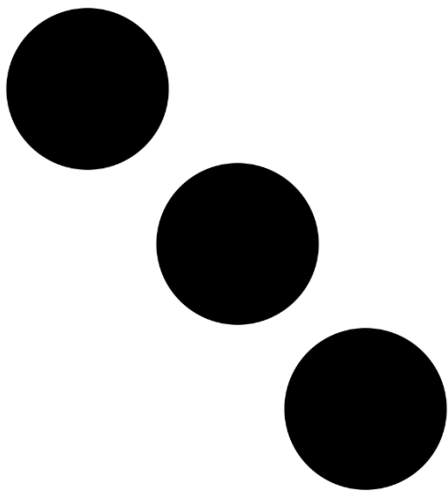
$$2 + 0 =$$



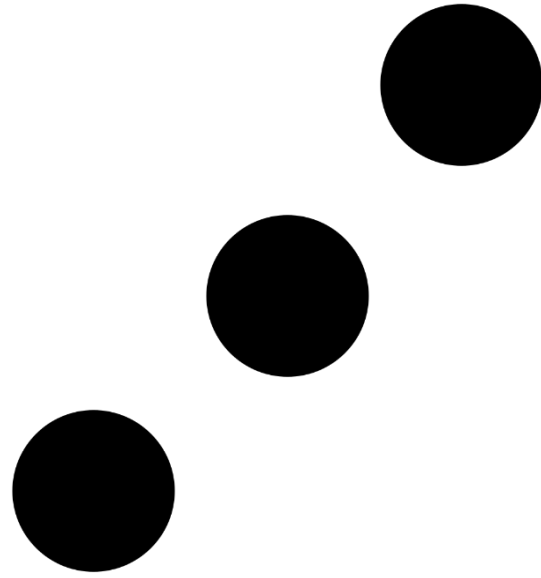
$$0 + 2 =$$



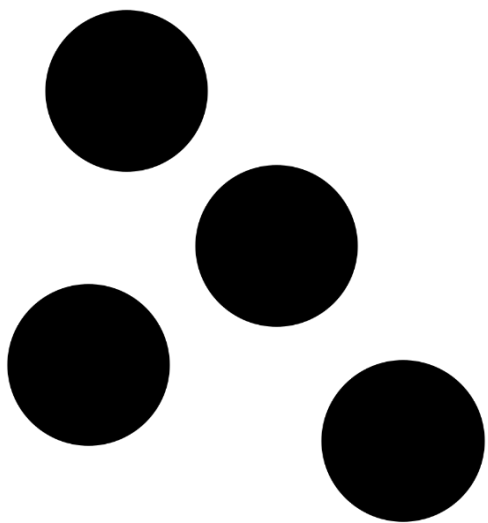
$$3 + 0 =$$



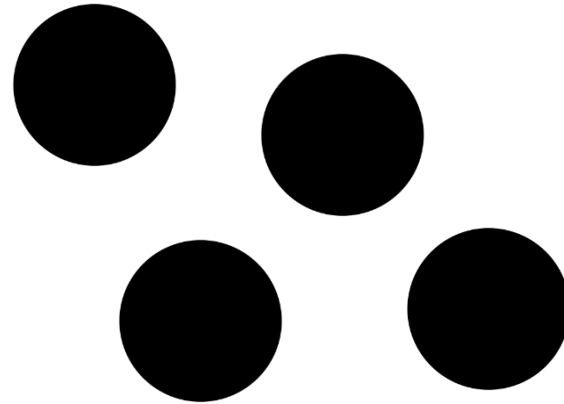
$$0 + 3 =$$



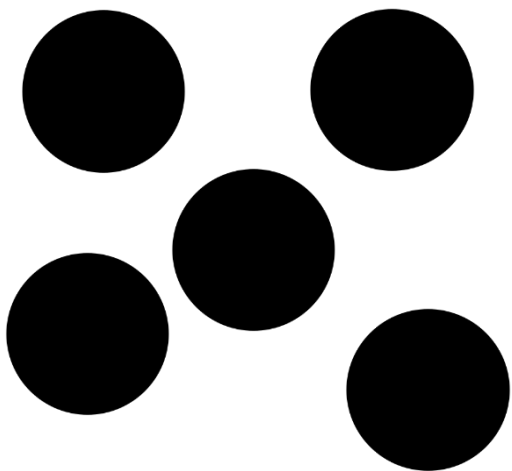
$$4 + 0 =$$



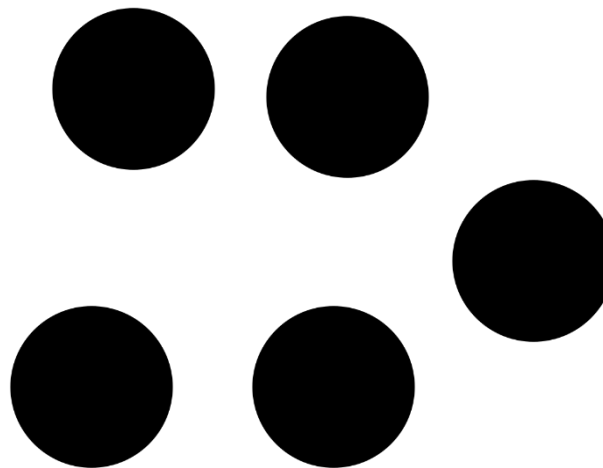
$$0 + 4 =$$



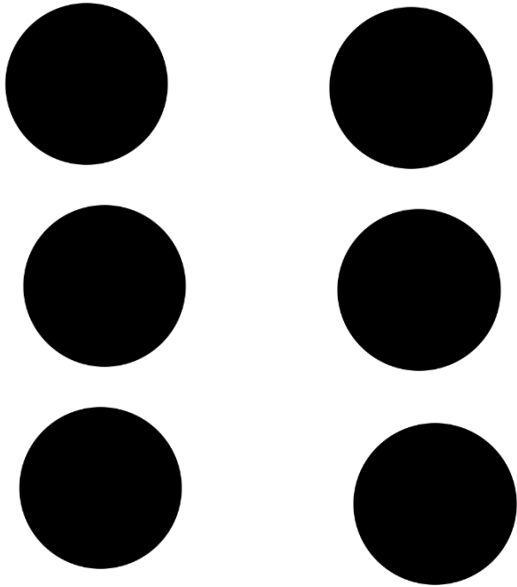
$$5 + 0 =$$



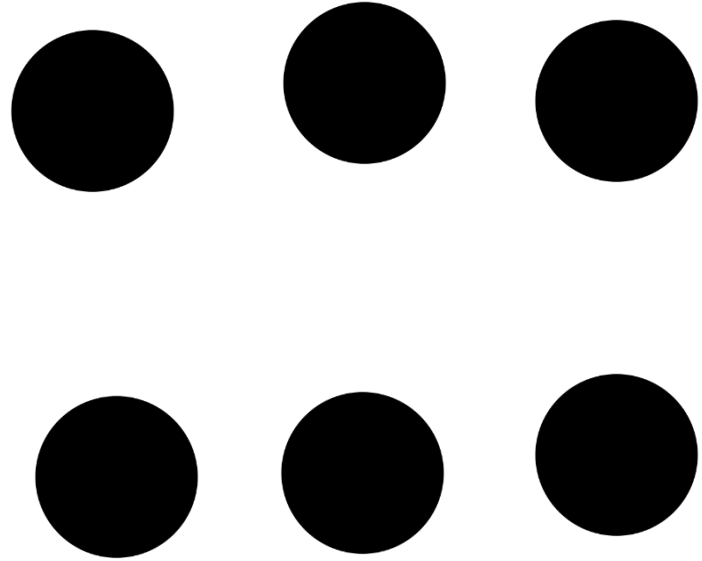
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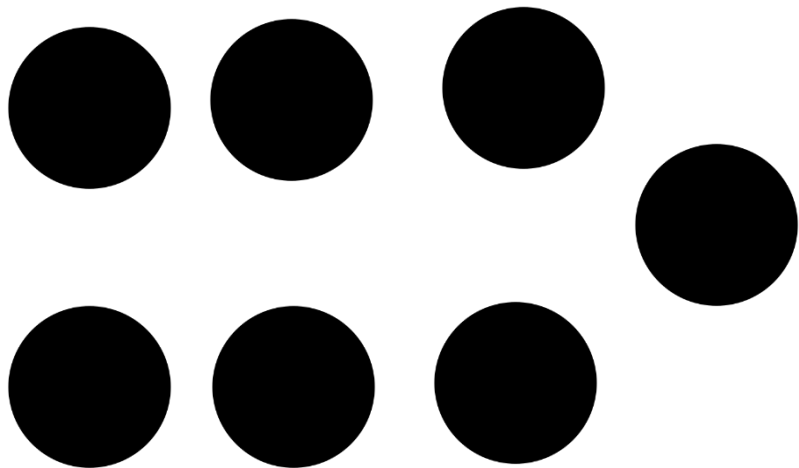
$$6 + 0 =$$



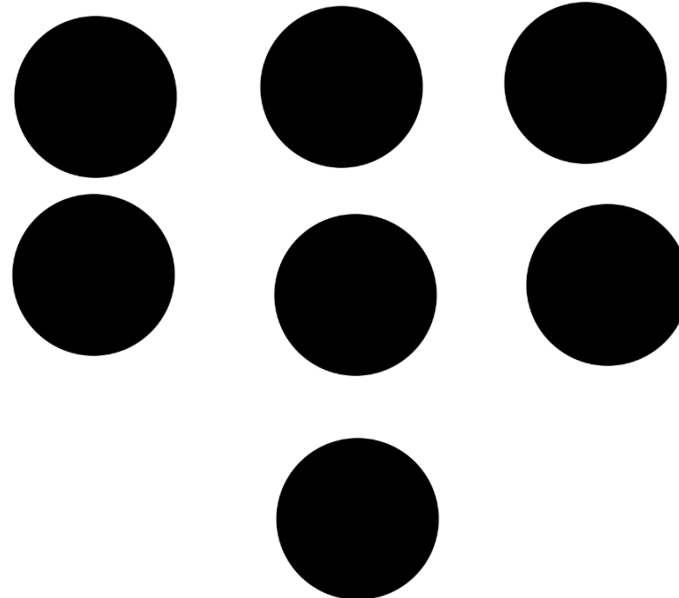
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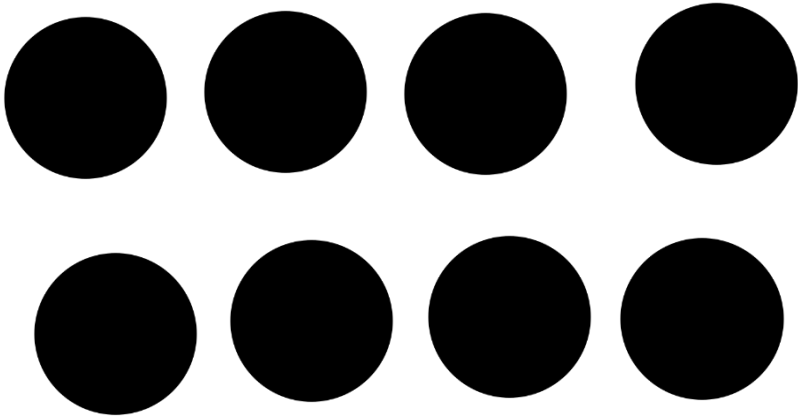
$$7 + 0 =$$



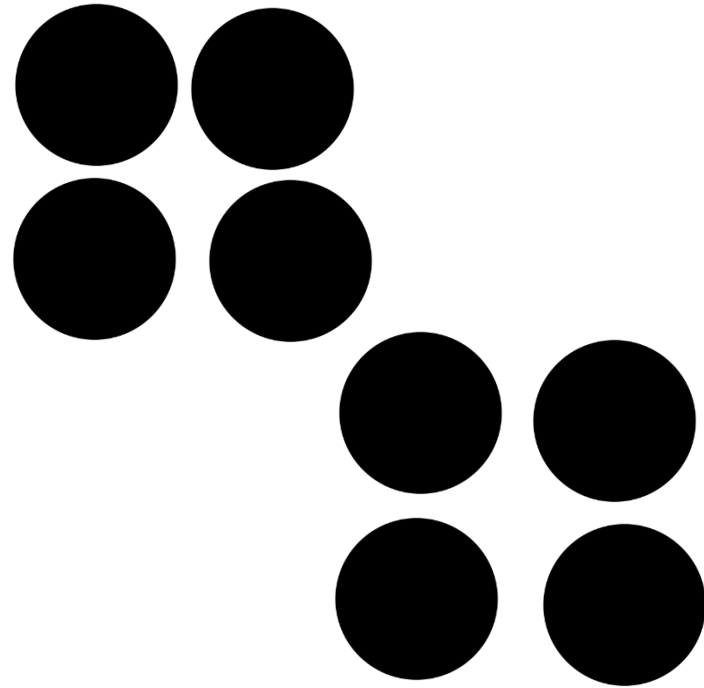
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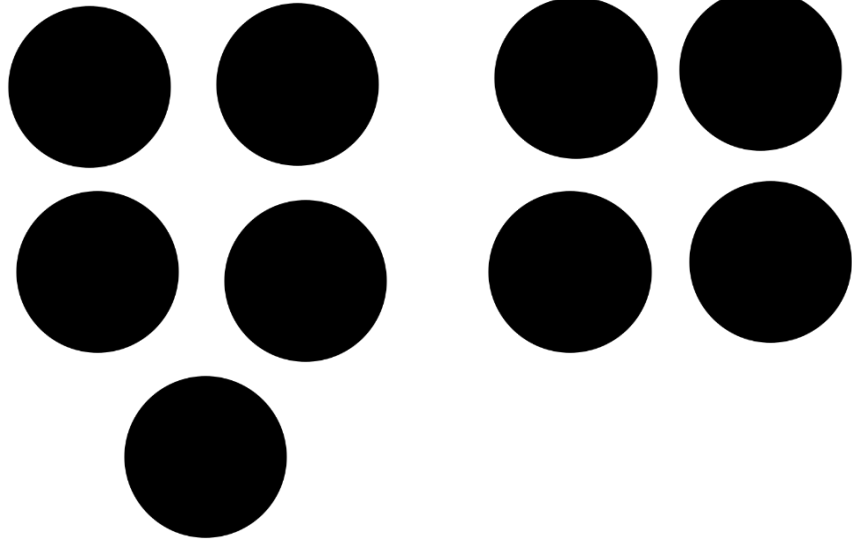
$$8 + 0 =$$



$$0 + 8 =$$



$$9 + 0 =$$



$$0 + 9 =$$

