

**LEMBAR KEGIATAN PESERTA DIDIK (LKPD) – MATEMATIKA KELAS X
EKSPONEN (4)**

Materi : **Bentuk Akar**

Nama : _____ Kelas/No : _____

Petunjuk : **Klik pada tempat isian untuk menjawab, dan tuliskan jawabanmu.**

Setelah mempelajari materi bentuk akar, lengkapi LKPD berikut!

1. Sederhankan bentuk akar berikut!

a. $\sqrt{24} = \sqrt{4 \cdot \underline{\hspace{1cm}}} = \sqrt{4} \cdot \sqrt{\underline{\hspace{1cm}}} = 2\sqrt{\underline{\hspace{1cm}}}$

e. $\sqrt{98} = \sqrt{\underline{\hspace{1cm}} \cdot 2} = \sqrt{\underline{\hspace{1cm}}} \cdot \sqrt{2} = \underline{\hspace{1cm}} \sqrt{2}$

b. $\sqrt{50} = \sqrt{25 \cdot \underline{\hspace{1cm}}} = \sqrt{25} \cdot \sqrt{\underline{\hspace{1cm}}} = \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}}$

f. $\sqrt{108} = \sqrt{\underline{\hspace{1cm}} \cdot 3} = \sqrt{\underline{\hspace{1cm}}} \cdot \sqrt{3} = \underline{\hspace{1cm}} \sqrt{3}$

c. $\sqrt{72} = \sqrt{36 \cdot \underline{\hspace{1cm}}} = \sqrt{\underline{\hspace{1cm}}} \cdot \sqrt{\underline{\hspace{1cm}}} = \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}}$

g. $\sqrt{150} = \sqrt{\underline{\hspace{1cm}} \cdot 6} = \sqrt{\underline{\hspace{1cm}}} \cdot \sqrt{6} = \underline{\hspace{1cm}} \sqrt{6}$

d. $\sqrt{80} = \sqrt{16 \cdot \underline{\hspace{1cm}}} = \sqrt{\underline{\hspace{1cm}}} \cdot \sqrt{\underline{\hspace{1cm}}} = \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}}$

h. $\sqrt{128} = \sqrt{\underline{\hspace{1cm}} \cdot \underline{\hspace{1cm}}} = \sqrt{\underline{\hspace{1cm}}} \cdot \sqrt{\underline{\hspace{1cm}}} = \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}}$

2. Tentukan hasil dari:

a. $2\sqrt{3} + 5\sqrt{3} - 4\sqrt{3} = (2 + 5 - \underline{\hspace{1cm}})\sqrt{3} = \underline{\hspace{1cm}} \sqrt{3}$

b. $\sqrt{2} - 2\sqrt{2} + 6\sqrt{2} = (1 - \underline{\hspace{1cm}} + \underline{\hspace{1cm}})\sqrt{2} = \underline{\hspace{1cm}} \sqrt{2}$

c. $5\sqrt{3} - 3\sqrt{2} - 4\sqrt{3} + 2\sqrt{2} = (5 - \underline{\hspace{1cm}})\sqrt{3} + (-3 + \underline{\hspace{1cm}})\sqrt{2} = \underline{\hspace{1cm}} \sqrt{3} - \underline{\hspace{1cm}} \sqrt{2}$

d. $\sqrt{48} + \sqrt{75} - \sqrt{12} = \sqrt{16 \cdot \underline{\hspace{1cm}}} + \sqrt{\underline{\hspace{1cm}} \cdot 3} - \sqrt{4 \cdot \underline{\hspace{1cm}}} = 4\sqrt{\underline{\hspace{1cm}}} + \underline{\hspace{1cm}} \sqrt{3} - 2\sqrt{\underline{\hspace{1cm}}} = (4 + \underline{\hspace{1cm}} - 2)\sqrt{\underline{\hspace{1cm}}} = \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}}$

e. $\sqrt{98} - \sqrt{162} + \sqrt{32} = \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}} - \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}} + \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}} = \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}}$

3. Tentukan hasil dari:

a. $\sqrt{20} \cdot \sqrt{18} = 2\sqrt{5} \cdot 3\sqrt{2} = (2 \cdot \underline{\hspace{1cm}})\sqrt{5 \cdot \underline{\hspace{1cm}}} = \underline{\hspace{1cm}} \sqrt{10}$

b. $2\sqrt{27} \cdot 3\sqrt{45} = 2 \cdot \underline{\hspace{1cm}} \sqrt{3} \cdot 3 \cdot \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}} = (\underline{\hspace{1cm}} \cdot 9)\sqrt{3 \cdot \underline{\hspace{1cm}}} = \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}}$

c. $\sqrt{5}(2 + 3\sqrt{12}) = \sqrt{5}(2 + 3 \cdot 2\sqrt{\underline{\hspace{1cm}}}) = 2\sqrt{5} + \underline{\hspace{1cm}} \sqrt{15}$

d. $(2 + \sqrt{2})(1 - \sqrt{2}) = 2 \cdot 1 + 2\sqrt{\underline{\hspace{1cm}}} + 1\sqrt{\underline{\hspace{1cm}}} - \sqrt{2} \cdot \sqrt{\underline{\hspace{1cm}}} = 2 + 3\sqrt{\underline{\hspace{1cm}}} - \underline{\hspace{1cm}}$

e. $(2\sqrt{3} + \sqrt{2})(4\sqrt{3} - \sqrt{2}) = 8 \cdot 3 - 2\sqrt{\underline{\hspace{1cm}}} + 4\sqrt{\underline{\hspace{1cm}}} - \sqrt{2} \cdot \sqrt{\underline{\hspace{1cm}}} = 24 + 2\sqrt{\underline{\hspace{1cm}}} - \underline{\hspace{1cm}}$

4. Tentukan bentuk rasional dari:

a. $\frac{2}{\sqrt{3}} = \frac{2}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = \frac{2\sqrt{\underline{\hspace{1cm}}}}{\underline{\hspace{1cm}}}$

b. $\frac{4}{2 - \sqrt{3}} = \frac{4}{2 - \sqrt{3}} \times \frac{2 + \sqrt{3}}{2 + \sqrt{3}} = \frac{4(2 + \sqrt{3})}{\underline{\hspace{1cm}} - 3} = 8 + \underline{\hspace{1cm}} \sqrt{\underline{\hspace{1cm}}}$

c. $\frac{4}{\sqrt{5} + \sqrt{3}} = \frac{4}{\sqrt{5} + \sqrt{3}} \times \frac{\sqrt{5} - \sqrt{\underline{\hspace{1cm}}}}{\sqrt{5} - \sqrt{\underline{\hspace{1cm}}}} = \frac{4(\sqrt{5} - \sqrt{\underline{\hspace{1cm}}})}{\underline{\hspace{1cm}} - \underline{\hspace{1cm}}} = \frac{4(\sqrt{5} - \sqrt{\underline{\hspace{1cm}}})}{2} = 2(\sqrt{5} - \sqrt{\underline{\hspace{1cm}}})$