

MATHEMATICS

نماذج اختبارات الأضواء

لشهر نوفمبر

الصف
2
الإعدادي
الفصل الدراسي الأول

1- Choose the correct answer:

2

- a If $ax^2 - b = (3x - 2)(3x + 2)$, what is the value of $a + b$? (-13 , 13 , -5 , 5)
- b Which of the following numbers can be the lengths of the sides of a right-angled triangle? (7,7,4 , 12,5,13 , 5,8,7 , 3,7,5)

2- Answer each of the following:

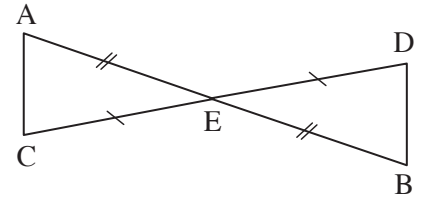
8

a In the opposite figure:

E is the midpoint of each of \overline{AB} and \overline{CD}

Prove that:

- a. $\triangle AEC \cong \triangle BED$
- b. $\overline{AC} \parallel \overline{DB}$



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b Find the value of a that makes the following a perfect square:

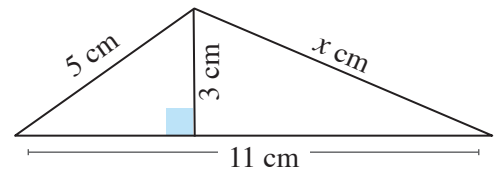
$$4x^2 + ax + 49$$

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c Find the value of x :



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d Factorize each of the following:

a. $3x^2 - 75$

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b. $8x^3 - 125$

.....

1- Choose the correct answer:

2

- a If the polynomial $(4x^2 + kx + 1)$ is a perfect square trinomial, what is the value of k ? (± 1 , ± 2 , ± 4 , ± 8)
- b If $ax^3 - 27 = (2x - 3)(4x^2 + bx + 9)$, what is the value of ab ? (6 , 12 , 24 , 48)

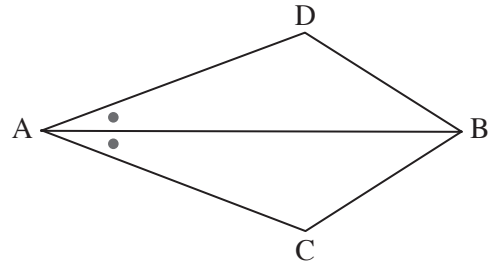
2- Answer each of the following:

8

- a In the opposite figure:

\overrightarrow{AB} bisects $\angle DAC$, $\angle ACB \cong \angle ADB$

Prove that: $\triangle ACB \cong \triangle ADB$



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- b Find the solution set in \mathbb{R} :

a. $x^2 - 8x + 15 = 0$

b. $x^3 + 6x^2 + 5x = 0$

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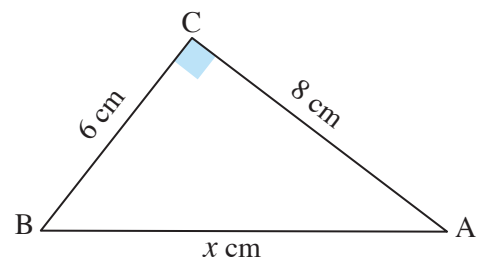
- c In the opposite figure: ABC is a right-angled triangle in $(\angle C)$:

Find the value of x

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d Factorize each of the following:

a. $x^2y^2 - 4$

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b. $(x + 2)(x - 5) - 8$

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.....



1- Choose the correct answer:

2

- a If $x^2 - a = (x - 4)(x + 4)$, then the value of $a = \dots\dots\dots$ (-16 , 16 , -8 , 8)
- b A rectangle with a length of 24 cm and a width of 7 cm, then the length of its diagonal = $\dots\dots\dots$ cm (25 , 28 , 20 , 182)

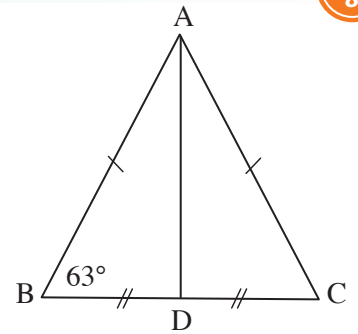
2- Answer each of the following:

8

a In the opposite figure:

The point D is the midpoint of \overline{BC} , $AB = AC$, $m(\angle B) = 63^\circ$

- a. Prove that: $\triangle ADB \cong \triangle ADC$
- b. Find: $m(\angle DAC)$



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b Determine the type of the triangle if its side lengths are:
4.5 cm , 20 cm and 21 cm

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c Factorize the following completely:

$$x^2 + 16y^2 - 8xy - 49$$

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d Use factorization to facilitate finding the value of:

a. $(49)^2 - 2(49)(39) + (39)^2$

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b. $(87)^2 - (13)^2$

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ALMAMUNA
Gem

MATHEMATICS

إجابات نماذج اختبارات الأضواء

لشهر نوفمبر

الصف
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1- Choose the correct answer:

- a If $ax^2 - b = (3x - 2)(3x + 2)$, what is the value of $a + b$? (-13 , 13 , -5 , 5)
- b Which of the following numbers can be the lengths of the sides of a right-angled triangle?
(7,7,4 , 12,5,13 , 5,8,7 , 3,7,5)

2- Answer each of the following:

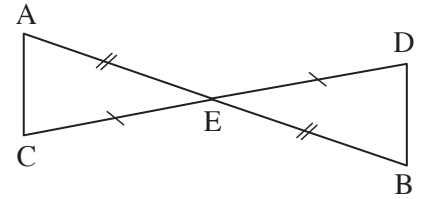
- a In the opposite figure:

E is the midpoint of each of \overline{AB} and \overline{CD}

Prove that:

a. $\triangle AEC \cong \triangle BED$

b. $\overline{AC} \parallel \overline{DB}$



Proof: In $\triangle AEC$, $\triangle BED$

\therefore E is the midpoint of \overline{AB} and \overline{CD}

\therefore $AE = BE$, $EC = ED$

\therefore $m(\angle AEC) = m(\angle BED)$ (V.O.A)

\therefore $\triangle AEC \cong \triangle BED$ (first requirement)

\therefore $m(\angle A) = m(\angle B)$ and they are alternating interior angles

\therefore $\overline{AC} \parallel \overline{DB}$ (second requirement)

- b Find the value of a that makes the following a perfect square:

$$4x^2 + ax + 49$$

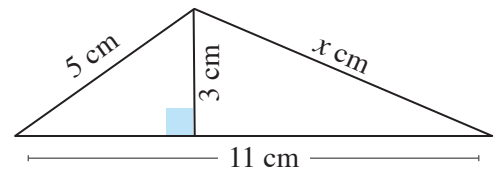
$$ax = \pm 2\sqrt{4x^2} \times \sqrt{49}$$

$$ax = \pm 28x$$

$$a = \pm 28$$

- c Find the value of x :

$$x = \sqrt{(3)^2 + (7)^2} = \sqrt{9 + 49} = \sqrt{58}$$



- d Factorize each of the following:

a. $3x^2 - 75$

$$3(x^2 - 25) = 3(x - 5)(x + 5)$$

b. $8x^3 - 125$

$$8x^3 - 125 = (2x - 5)(4x^2 + 10x + 25)$$

1- Choose the correct answer:

- a If the polynomial $(4x^2 + kx + 1)$ is a perfect square trinomial, what is the value of k ? (± 1 , ± 2 , ± 4 , ± 8)
- b If $ax^3 - 27 = (2x - 3)(4x^2 + bx + 9)$, what is the value of ab ? (6 , 12 , 24 , 48)

2- Answer each of the following:

- a In the opposite figure:

\overrightarrow{AB} bisects $\angle DAC$, $\angle ACB \cong \angle ADB$

Prove that: $\triangle ACB \cong \triangle ADB$

Proof:

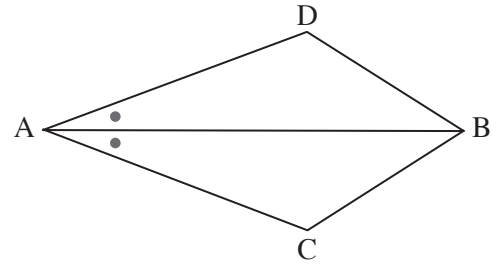
$\therefore \overrightarrow{AB}$ bisects $\angle DAC$

$\therefore m(\angle CAB) = m(\angle DAB)$ ①

$\therefore \angle ADB \cong \angle ACB$ ②

$\therefore m(\angle ABD) = m(\angle ABC)$ ③

From ①, ②, ③ $\therefore \triangle ACB \cong \triangle ADB$



- b Find the solution set in \mathbb{R} :

a. $x^2 - 8x + 15 = 0$

b. $x^3 + 6x^2 + 5x = 0$

Solution:

a. $x^2 - 8x + 15 = 0$

$(x - 3)(x - 5) = 0$

$x = 3$ or $x = 5$

S.S = $\{3, 5\}$

b. $x^3 + 6x^2 + 5x = 0$, $x(x^2 + 6x + 5) = 0$

$x(x + 1)(x + 5) = 0$

$x = 0$ or $x = -1$ or $x = -5$

S.S = $\{0, -1, -5\}$

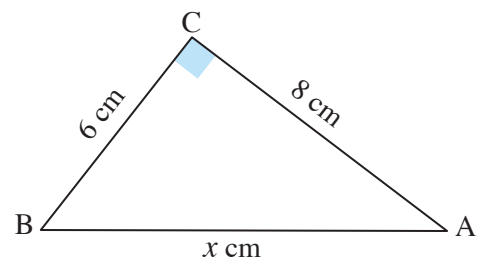
- c In the opposite figure: ABC is a right-angled triangle in $(\angle C)$:

Find the value of x

ABC is a right-angled triangle in C

$(AB)^2 = (BC)^2 + (AC)^2$

The value of $x = \sqrt{(6)^2 + (8)^2} = 10$



d Factorize each of the following:

a. $x^2 y^2 - 4$

$(xy + 2)(xy - 2)$

b. $(x + 2)(x - 5) - 8$

$x^2 - 3x - 10 - 8$

$= x^2 - 3x - 18 = (x - 6)(x + 3)$



1- Choose the correct answer:

- a If $x^2 - a = (x - 4)(x + 4)$, then the value of $a = \dots\dots\dots$ (-16 , 16 , -8 , 8)
- b A rectangle with a length of 24 cm and a width of 7 cm, then the length of its diagonal = $\dots\dots\dots$ cm (25 , 28 , 20 , 182)

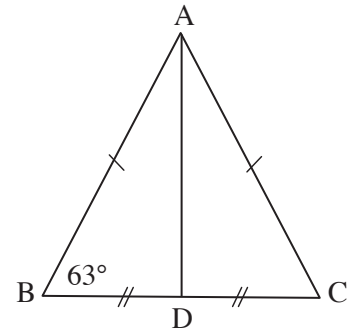
2- Answer each of the following:

- a In the opposite figure:

The point D is the midpoint of \overline{BC} , $AB = AC$, $m(\angle B) = 63^\circ$

a. Prove that: $\triangle ADB \cong \triangle ADC$

b. Find: $m(\angle DAC)$



Proof: In $\triangle ADB$, $\triangle ADC$:

$\therefore AB = AC$

$\therefore \overline{AD}$ (common side)

$\therefore BD = CD$

$\therefore \triangle ADB \cong \triangle ADC$ ①

$\therefore m(\angle C) = m(\angle B) = 63^\circ$

$\therefore m(\angle BAC) = 180^\circ - (63^\circ + 63^\circ) = 54^\circ$

$\therefore \triangle ADB \cong \triangle ADC$

$\therefore m(\angle DAC) = m(\angle DAB) = \frac{54^\circ}{2} = 27^\circ$ ②

- b Determine the type of the triangle if its side lengths are:

4.5 cm , 20 cm and 21 cm

$(21)^2 = 441$

$(20)^2 + (4.5)^2 = 420.25$

$(21)^2 > (20)^2 + (4.5)^2$

The triangle is obtuse-angled.

c Factorize the following completely:

$$x^2 + 16y^2 - 8xy - 49$$

$$\begin{aligned}x^2 + 16y^2 - 8xy - 49 &= (x^2 - 8xy + 16y^2) - 49 \\ &= (x - 4y)^2 - (7)^2 \\ &= (x - 4y - 7)(x - 4y + 7)\end{aligned}$$

d Use factorization to facilitate finding the value of:

a. $(49)^2 - 2(49)(39) + (39)^2$

b. $(87)^2 - (13)^2$

Solution:

a. $(49 - 39)^2 = (10)^2 = 100$

b. $(87 + 13)(87 - 13) = 100 \times 74 = 7,400$

تطبيق



مذكرات جاهزة للطباعة

لتحميل الملفات التعليمية مجاناً للمعلم والطالب

مذكرات وملازم / مراجعات وملخصات / امتحانات / كتب الوزارة /
أدلة المعلم / دفاتر التحضير / سجلات مدرسية / أوراق تأسيس

امسح الكود بموبايلك علشان تقدر تثبت التطبيق

وتقدر ف أي وقت تحمّل ال نفسك فيه ببلاش

هيغنيك عن البحث والجروبات والقنوات الكثيرة

