

سلسلة الطارق في الرياضيات - هيكل صف سابع



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ⇨ المناهج الإماراتية ⇨ الصف السابع ⇨ رياضيات ⇨ الفصل الثالث ⇨ ملفات متنوعة ⇨ الملف

تاريخ إضافة الملف على موقع المناهج: 22:58:15 2026-06-21

ملفات اكتب للمعلم اكتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل
منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي للمدرس

المزيد من مادة
رياضيات:

إعداد: طارق علي

التواصل الاجتماعي بحسب الصف السابع



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف السابع والمادة رياضيات في الفصل الثالث

نموذج تدريبي كراسة تدريبية

1

أسئلة متوقعة للامتحان 2026م غير محلول

2

Reveal Coverage Grade 7 GEN

3

حلول هيكل اختبار نهاية الفصل 2026م

4

هيكل اختبار نهاية الفصل 2026م غير محلول

5

الطارق

سلسلة

الرياضيات

فني

هيكل صف سابع شراكات 2026

منحة طارق أكاديمي للرياضيات

Tarek Academy

صف سابع (عام)

طارق

أستاذ الرياضيات

0562854282 037637703

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PRACTICE QUESTIONS

1. Find the GCF of all terms
2. Divide each term by the GCF
3. Write GCF $\times$ (remaining terms)
4. Check: distribute back to verify

1. Factor: $6x + 9$

$$6x = 2 \cdot 3 \cdot x$$

$$9 = 3 \cdot 3$$

$$\text{GCF} = 3$$

$$3(2x + 3)$$

2. Factor: $14m - 21$

$$14m = 2 \cdot 7 \cdot m$$

$$21 = 3 \cdot 7$$

$$\text{GCF} = 7$$

$$7(2m - 3)$$

3. Factor: $30p + 45q$

$$30p = 3 \cdot 10 \cdot p = (3) \cdot 2 \cdot (5) \cdot p$$

$$45q = 5 \cdot 9 \cdot q = (5) \cdot (3) \cdot 3 \cdot q$$

$$\text{GCF} = 3 \cdot 5 = 15$$

$$15(2p + 3q)$$



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4. Factor: $16n - 24$

$$16n = 2 \cdot 8 \cdot n = 2 \cdot 2 \cdot 2 \cdot 2 \cdot n$$

$$24 = 3 \cdot 8 = 3 \cdot 2 \cdot 2 \cdot 2$$

$$\text{GCF} = 2 \cdot 2 \cdot 2 = \underline{8}$$

$$\rightarrow 8(2n - 3)$$

5. A rectangle has area $10x + 15$. Write the dimensions using factoring.

$$10x = 2 \cdot 5 \cdot x$$

$$15 = 3 \cdot 5$$

$$\rightarrow \text{GCF} = 5$$

$$5(2x + 3)$$

PRACTICE QUESTIONS

Equivalent Expressions

1. Simplify $3y + 5 + y - 2$, then evaluate for $y = 4$.

like term

$$3y + y + 5 - 2 = \boxed{4y + 3}$$

$$\text{at } y = 4 \Rightarrow 4(4) + 3 = \underline{19}$$



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2. A phone plan costs $(20 + 0.05m)$ dollars where m = minutes. Find cost for 200 minutes.

$$\begin{aligned}
 &20 + 0.05(200) \\
 &20 + \frac{5}{100} \times 200 = 20 + 5 \times 2 \\
 &= 20 + 10 = 30 \$
 \end{aligned}$$

3. Write two equivalent expressions for $2(3x - 4)$.

$$\begin{aligned}
 \textcircled{1} \quad 2(3x - 4) &= 2(3x) - 2(4) \\
 &= 6x - 8
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{2} \quad 2(3x + (-4)) &= 2(3x) + 2(-4) \\
 &= 6x - 8
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{3} \quad 2(-4 + 3x) &= 2(-4) + 2(3x) \\
 &= -8 + 6x \\
 \text{order} \quad &= 6x - 8
 \end{aligned}$$

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4. Are $5(x + 2)$ and $5x + 10$ equivalent? Show how you know.

مساويين.

$$* 5(x + 2) = 5x + 5(2) = 5x + 10$$

* $5x + 10$ Yes equivalent.

Two-Step Inequalities

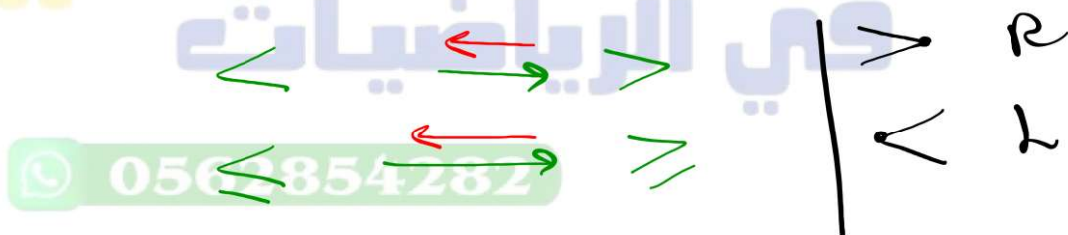
An inequality shows a range of solutions, not just one answer.

Symbol	Meaning	Graph
$<$	Less than	Open circle ○ ✓
$>$	Greater than	Open circle ○ ✓
$\leq$	Less than or equal	Closed circle ● ✓
$\geq$	Greater than or equal	Closed circle ● ✓

* Δ Flip the sign when multiplying or dividing by a negative number!

when times or divided by (-)

① change side of mark



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PRACTICE QUESTIONS

1. Solve and graph: $2x + 5 > 11$

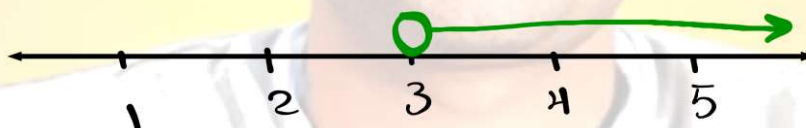
$$2x > 11 - 5$$

$$2x > 6$$

$$x > \frac{6}{2}$$

$$\rightarrow |x > 3|$$

Right, open

2. Solve: $4x - 7 \leq 13$

$$4x \leq 13 + 7$$

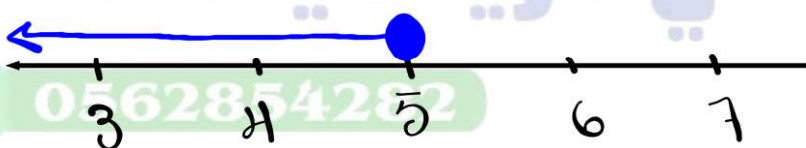
$$4x \leq 20$$

$$x \leq \frac{20}{4}$$

$$\rightarrow |x \leq 5|$$

* closed

* left



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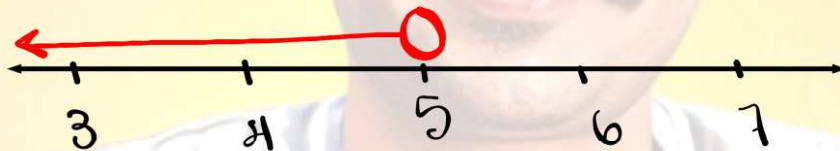


3. Solve: $-3x + 6 > -9$ (watch the sign!)

$$-3x > -9 - 6$$

$$-3x > -15$$

$$x < \frac{+15}{+3} \rightarrow \boxed{x < 5}$$



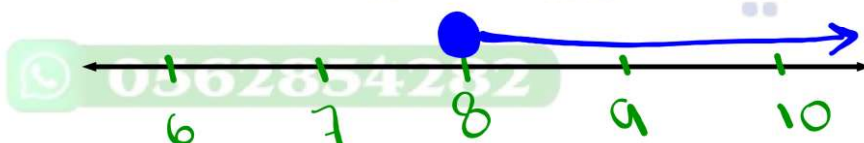
4. Write and solve: "A number doubled, then decreased by 5, is at least 11."

$$2x - 5 \geq 11$$

$$2x \geq 11 + 5$$

$$2x \geq 16 \rightarrow x \geq \frac{16}{2}$$

$$\boxed{x \geq 8}$$



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5. You need at least \$50. You have \$8 and earn \$7/hour. How many hours minimum?

$$8 + 7x \geq 50$$

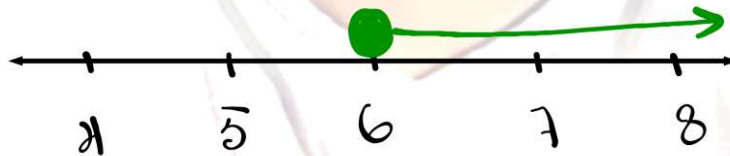
$$7x \geq 50 - 8$$

$$7x \geq 42$$

$$x \geq \frac{42}{7}$$

$$\rightarrow \boxed{x \geq 6}$$

كل ساعة
every hour
variable



Mean = $\frac{\text{sum of all values}}{\text{number of values}}$

Median : Middle of sorted data

Mode : Value that appears most

Range : Max – Min

Interquartile range (IQR) $Q3 - Q1$

$MAD = \frac{\text{sum of each value} - \text{mean}}{\text{number of values}}$



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PRACTICE QUESTIONS

1. Find the mean, median, mode, and range: ~~12~~, ~~15~~, 15, ~~18~~, ~~20~~

$$* \text{ mean } = \frac{12 + 15 + 15 + 18 + 20}{5} = \frac{80}{5} = 16$$

$$* \text{ Median } = 15 \quad \text{order} \rightarrow \text{cut}$$

$$* \text{ Mode } = 15 \quad \text{الأكثر تكراراً}$$

$$* \text{ Range } = 20 - 12 = 8$$

2. Which class above has a larger IQR? What does this tell us?

12, 15, 15, 18, 20

$$\rightarrow Q_1 = \text{left middle} \rightarrow 12, 15 = \frac{12+15}{2} = 13.5$$

$$\rightarrow Q_3 = \text{Right middle} \rightarrow 18, 20 = \frac{18+20}{2} = 19$$

$$IQR = Q_3 - Q_1 = 19 - 13.5 = 5.5$$

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3. Calculate the MAD for: 4, 6, 8, 10, 12 (mean = 8)

① mean = 8

② Subtract All numbers and mean $\rightarrow (+)$
Big - Small

$$8 - 4 = 4$$

$$8 - 6 = 2$$

$$8 - 8 = 0$$

$$10 - 8 = 2$$

$$12 - 8 = 4$$

$$\begin{aligned} \text{③ MAD} &= \frac{4 + 2 + 0 + 2 + 4}{5} = \frac{12}{5} \rightarrow \text{Big} \\ &= 2 \frac{2}{5} \end{aligned}$$

4. Team A has median score 78 and IQR 10. Team B has median 78 and IQR 22. Which is more consistent?

rule: less IQR $\rightarrow$ less variability
more consistent

$\rightarrow$ Team A is more consistent as
has less IQR = 10





Probability of Compound Events

A compound event involves two or more separate events.

Independent Events: One event does NOT affect the other e.g. replaced

Flipping a coin **AND** rolling a die $P(A \text{ and } B) = P(A) \times P(B)$

Dependent Events: First event **CHANGES** the probability of second

e.g. Drawing cards **without replacement** $P(A \text{ then } B) = P(A) \times P(B|A)$

Flipping a coin, then rolling a die

Coin
H or T

Die
1-6

$$P(\text{Heads}) = 1/2$$

$$P(\text{rolling a 4}) = 1/6$$

$$P(\text{Heads AND 4}) = 1/2 \times 1/6$$

PRACTICE QUESTIONS

1. Roll a die and flip a coin. Find $P(\underline{6} \text{ and } \underline{\text{Tails}})$.

$\{1, 2, 3, 4, 5, 6\}$ → $\{H, T\}$

$$P(6 \text{ and } T) = P(6) \times P(T) = \frac{1}{6} \times \frac{1}{2} = \frac{1}{12}$$

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2. Spin a spinner with sections 1, 2, 3, 4 twice. Find P(both even).

$$\{1, 2, 3, 4\} \rightarrow \{1, 2, 3, 4\}$$

$$(2, 2), (2, 4), (4, 2), (4, 4) \rightarrow \text{both even}$$

$$\text{Total} = 4 \times 4 = 16$$

$$P(\text{both even}) = \frac{4}{16} = \frac{4 \times 1}{4 \times 4} = \left[\frac{1}{4} \right]$$

$$\{1, 2, 3, 4\} \rightarrow \{1, 2, 3, 4\} \quad \text{* مستقل$$

$$P(\text{even}) \times P(\text{even}) = \frac{2}{4} \times \frac{2}{4} = \frac{1}{4}$$

3. A bag has 4 yellow, 6 green balls. Without replacing, find P(yellow then green).

$$\text{Total} = 10$$

↖ dependent
↗ طرح من مقام، باقی

$$P(y) \times P(g) = \frac{4}{10} \times \frac{6}{9} = \frac{2 \times 2 \times 2 \times 3}{2 \times 5 \times 3 \times 3} = \frac{4}{15}$$

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4. A card is drawn from a standard 52-card deck. Find $P(\text{red AND a face card})$.

$$\begin{aligned} \text{red} &= 26 \\ 1 &\rightarrow 10 \\ (\text{J, K, Q}) \times 2 \\ 3 \times 2 &= 6 \end{aligned}$$

$$\text{black} = 26$$

$$P(\text{red}) \times P(\text{Face})$$

$$\begin{aligned} \frac{26}{52} \times \frac{6}{26} &= \frac{6}{52} \div 2 \\ &= \frac{3}{26} \end{aligned}$$

PRACTICE QUESTIONS

1. Draw a tree diagram for rolling two dice. How many total outcomes?

$$\{1, 2, 3, 4, 5, 6\}, \{1, 2, 3, 4, 5, 6\}$$

$$\text{outcomes} = 6 \times 6 = 36$$





2. Make a table for choosing a shirt (Red, Blue, Green) and pants (Short, Long).

	Red	Blue	green
short	R, S	B, S	g, S
Long	R, L	B, L	g, L

3. List all outcomes for flipping 3 coins. How many ways to get exactly 2 Heads?

$(H, T) \rightarrow (H, T) \rightarrow (H, T)$

$\Rightarrow (H, T) \rightarrow (H, T)$

$\{ (H, H), (H, T), (T, H), (T, T) \}$

$\Rightarrow \hookrightarrow (H, T)$

$S = \{ (H, H, H), (H, H, T), (H, T, H), (H, T, T), (T, H, H), (T, H, T), (T, T, H), (T, T, T) \}$

$(H, T, T), (T, H, H), (T, H, T)$

$(T, T, H), (T, T, T) \}$ Total = 8

2 Heads = 3



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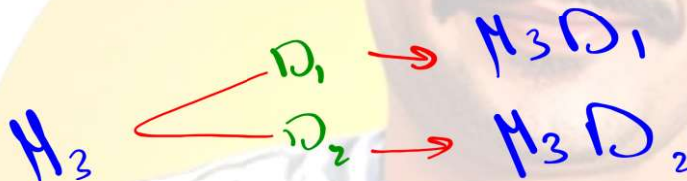
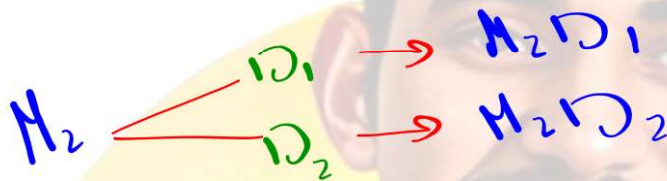
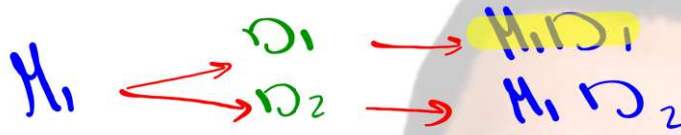
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4. A menu has 3 mains and 2 desserts. Create a tree diagram and find $P(\text{pasta AND ice cream})$.

3 Mains: Pasta (M_1), Burger (M_2), Pizza (M_3)

2 Desserts: Ice Cream (D_1), Cake (D_2)



$$\text{Total} = 3 \times 2 = 6$$

$$P(M_1, D_1) = \frac{1}{6}$$

1. Find the area of a circle with
radius 8 m.

(Use $\pi \approx 3.14$)

$$A = \pi r^2$$

$$A = 3.14 \times 8^2 = 3.14 \times 64 = 200.96 \text{ m}^2$$

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2. A circular pond has diameter 20
m. Find its area.

$$r = \frac{d}{2} = \frac{20}{2} = 10 \text{ m}$$

$$A = 3.14 \times 10^2 = 3.14 \times 100 = \boxed{314 \text{ m}^2}$$

3. A circular rug has radius 2.5 m.
Find its area to 2 decimal places.

$$\begin{aligned} A &= \pi r^2 = 3.14 \times (2.5)^2 \\ &= 3.14 \times 6.25 \\ &= 19.625 \\ &\approx 19.63 \text{ m}^2 \end{aligned}$$

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4. Two circles: one with $r = 4$ cm,
another with $r = 8$ cm. How many
times bigger is the larger area?

* Circle 1 : $r = 4$ cm

$$A_1 = \pi r^2 = 3.14 \times 4^2 = 3.14 \times 16$$

$$A_1 = 50.24 \text{ cm}^2$$

* Circle 2 : $r = 8$

$$A_2 = 3.14 \times 8^2 = 3.14 \times 64$$

$$A_2 = 200.96 \text{ cm}^2$$

$$* \frac{A_2}{A_1} \rightarrow \frac{\text{Big}}{\text{Small}} = \frac{200.96}{50.24}$$

4 Times

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* حل سؤال *

$$A_1 = \pi r^2 = \pi (4)^2$$

$$= 16\pi$$

$$A_2 = \pi r^2 = \pi (8)^2$$

$$= 64\pi$$

$$* \frac{\text{Big}}{\text{Small}} = \frac{A_2}{A_1} = \frac{64\pi}{16\pi}$$

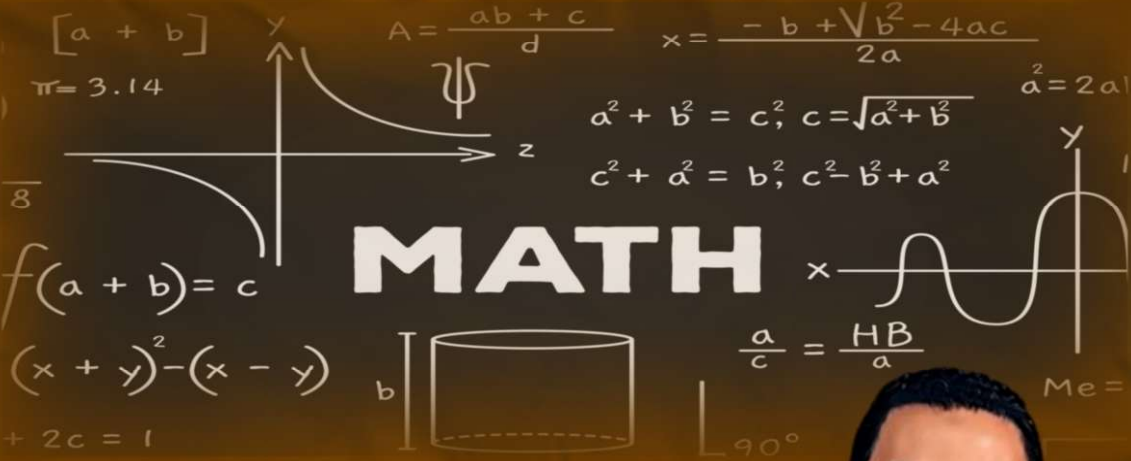
$$= \frac{64}{16} = 4 \text{ Times}$$

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IN Math



خاص بالمنصة



خاص بجميع الجروبات و القنوات



استاذ / طارق علي