



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ⇨ المناهج الإماراتية ⇨ الصف الثاني عشر المتقدم ⇨ فيزياء ⇨ الفصل الثالث ⇨ ملفات متنوعة ⇨ الملف

تاريخ إضافة الملف على موقع المناهج: 22:54:32 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
فيزياء:

التواصل الاجتماعي بحسب الصف الثاني عشر المتقدم



صفحة المناهج
الإماراتية على
فيسبوك

الرياضيات

اللغة الانجليزية

اللغة العربية

التربية الاسلامية

المواد على تلغرام

المزيد من الملفات بحسب الصف الثاني عشر المتقدم والمادة فيزياء في الفصل الثالث

اختبار تجريبي على الهيكل غير محلول	1
التربية تحدد إجازة الطلبة والمعلمين قبل انطلاق العام الدراسي 2026-2027	2
نموذج تدريبي وفق الهيكل 2026	3
نموذج تدريبي وفق الهيكل	4
End of Term 3 Revision Physics	5

الطارق

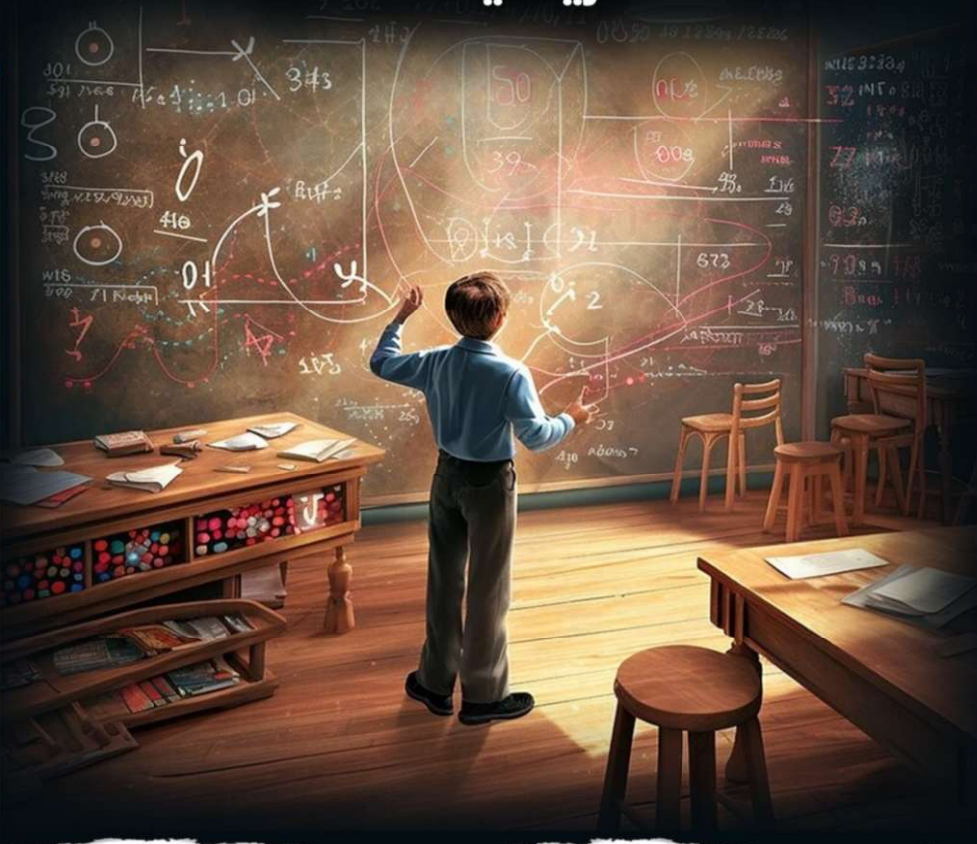
سلسلة

الرياضيات

منطقة طارق أكاديمي للرياضيات

Tarek Academy

هيكل 7 عام ريفيل 2026



صف سابع (عام ريفيل)

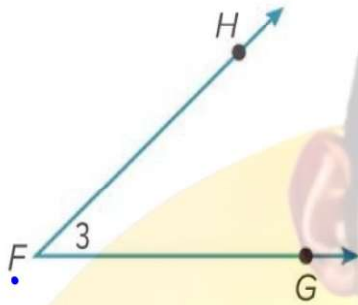
طارق

أستاذ الرياضيات

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Q1-MCQ 8-1

1. Name the angle in four ways. (Example 1)



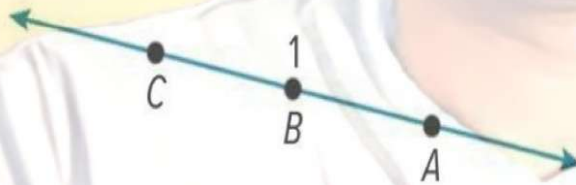
A) $\angle F, \angle HFG, \angle 3, \angle GFH$

B) $\angle H, \angle FHG, \angle 3, \angle GHF$

C) $\angle G, \angle FGH, \angle 3, \angle HGF$

D) $\angle 3, \angle F, \angle HGF, \angle GHF$

2. Name the angle in four ways. (Example 1)



A) $\angle C, \angle BCA, \angle 1, \angle ACB$

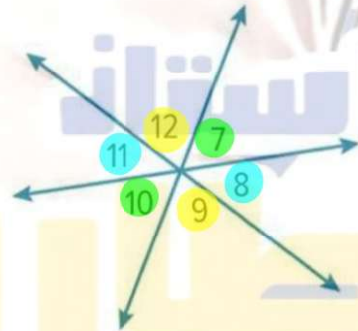
B) $\angle 1, \angle B, \angle CBA, \angle ABC$

C) $\angle A, \angle CAB, \angle 1, \angle BAC$

D) $\angle 1, \angle B, \angle CAB, \angle ACB$

3. Refer to the diagram below. Identify three pairs of vertical angles. Name all the angles that are adjacent to $\angle 10$. (Examples 2 and 4)

vertical $\rightarrow$ opposite
adjacent $\rightarrow$ جوار



A) Vertical: $\angle 7$ and $\angle 12, \angle 8$ and $\angle 9, \angle 10$ and $\angle 11$; Adjacent to $\angle 10$: $\angle 11$ and $\angle 12$

B) Vertical: $\angle 7$ and $\angle 10, \angle 8$ and $\angle 11, \angle 9$ and $\angle 12$; Adjacent to $\angle 10$: $\angle 9$ and $\angle 11$

C) Vertical: $\angle 7$ and $\angle 11, \angle 8$ and $\angle 12, \angle 9$ and $\angle 10$; Adjacent to $\angle 10$: $\angle 8$ and $\angle 12$

D) Vertical: $\angle 7$ and $\angle 9, \angle 8$ and $\angle 10, \angle 11$ and $\angle 12$; Adjacent to $\angle 10$: $\angle 7$ and $\angle 9$

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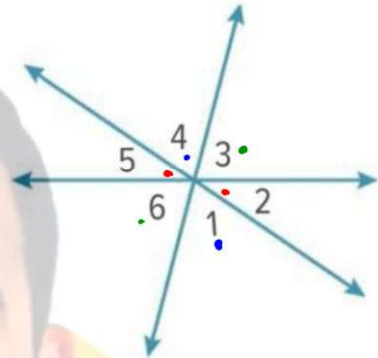
Grade

7

Reveal



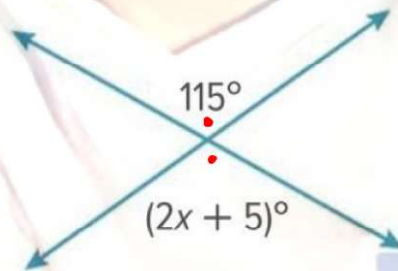
4. Identify three pairs of vertical angles. Name all the angles that are adjacent to $\angle 3$.



- A) Vertical: $\angle 1$ and $\angle 5$, $\angle 2$ and $\angle 6$, $\angle 3$ and $\angle 4$; Adjacent to $\angle 3$: $\angle 4$ and $\angle 6$
 B) Vertical: $\angle 1$ and $\angle 4$, $\angle 2$ and $\angle 5$, $\angle 3$ and $\angle 6$; Adjacent to $\angle 3$: $\angle 1$ and $\angle 5$
 C) Vertical: $\angle 1$ and $\angle 3$, $\angle 2$ and $\angle 4$, $\angle 5$ and $\angle 6$; Adjacent to $\angle 3$: $\angle 2$ and $\angle 6$
 D) Vertical: $\angle 1$ and $\angle 4$, $\angle 2$ and $\angle 5$, $\angle 3$ and $\angle 6$; Adjacent to $\angle 3$: $\angle 2$ and $\angle 4$

Q2-MCQ 8-1

5. Write and solve an equation to find the value of x . (Example 3)



vertical are
(=)

A) $2x + 5 = 115 \rightarrow x = 60$

B) $2x + 5 + 115 = 180 \rightarrow x = 30$

☒ C) $2x + 5 = 115 \rightarrow x = 55$

D) $2x + 5 = 90 \rightarrow x = 42.5$

$2x + 5 = 115$

$2x = 115 - 5$

$2x = 110$

$x = \frac{110}{2}$

$x = 55$

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6. Write and solve an equation to find the value of x .

(Example 3)

A) $2x = 120 \rightarrow x = 60$

B) $2x + 120 = 180 \rightarrow x = 30$

C) $2x = 120 \rightarrow x = 120$

D) $2x = 90 \rightarrow x = 45$

120° $(2x)^\circ$

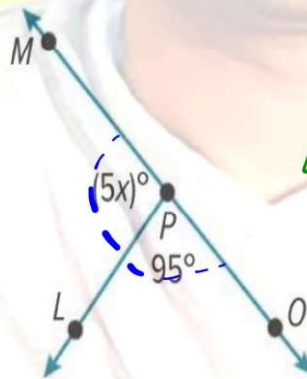
$$2x = 120$$

$$x = \frac{120}{2}$$

$$x = 60$$

7. Write and solve an equation to find the value of x . (Example 5)

supplement



A) $5x = 95 \rightarrow x = 19$

B) $5x + 95 = 180 \rightarrow x = 17$

C) $5x + 95 = 90 \rightarrow x = -1$

D) $5x + 95 = 180 \rightarrow x = 1$

$$5x + 95 = 180 \rightarrow 5x = 180 - 95$$

$$5x = 85 \rightarrow x = \frac{85}{5}$$

$$x = 17$$

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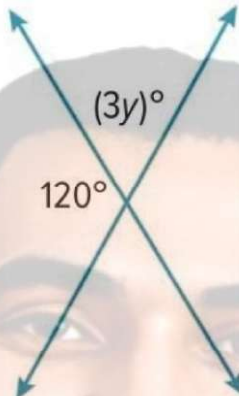
8. **Open Response** Write and solve an equation to find the value of y .

A) $3y = 120 \rightarrow y = 40$

B) $3y + 120 = 90 \rightarrow y = -10$

☒ C) $3y + 120 = 180 \rightarrow y = 20$

D) $3y = 180 \rightarrow y = 60$



$$3y + 120 = 180$$

$$3y = 180 - 120$$

$$3y = 60$$

$$y = \frac{60}{3} = 20$$

Q3-MCQ 8-2

Give the measure of the angle that is complementary to the given angle. (Example 1)

1.



A) 135°

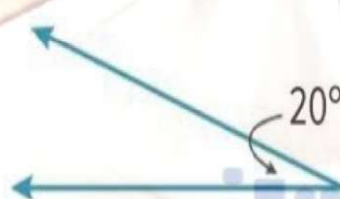
☒ B) 45°

C) 55°

D) 90°

$$90 - 45 = 45^\circ$$

2.



☒ A) 70°

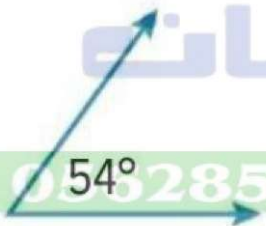
B) 160°

C) 80°

D) 20°

$$90 - 20 = 70$$

3.



A) 46°

☒ C) 36°

B) 126°

D) 146°

$$90 - 54 = 36^\circ$$

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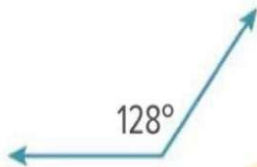
Reveal



Q4-MCQ 8-2

Give the measure of the angle that is supplementary to the given angle. (Example 3)

4.



$$180 - 128 = 52$$

A) 62° ✓ B) 52° C) 152° D) 42°

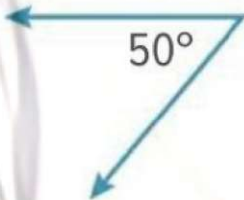
5.



$$180 - 160 = 20$$

✓ A) 20° B) 30° C) 110° D) 70°

6.

A) 40° ✓ C) 130° B) 140° D) 50°

$$180 - 50 = 130$$

Q5-MCQ 8-2

Write and solve an equation to find the value of x in each figure. (Examples 2 and 4)

7.

A) Equation: $22 + 4x = 180 \Rightarrow x = 39.5$ ✓ B) Equation: $22 + 4x = 90 \Rightarrow x = 17$ C) Equation: $4x = 22 \Rightarrow x = 5.5$ D) Equation: $22 + 4x = 90 \Rightarrow x = 28$

$$4x + 22 = 90 \rightarrow 4x = 90 - 22 \rightarrow 4x = 68$$

$$x = \frac{68}{4} = 17$$

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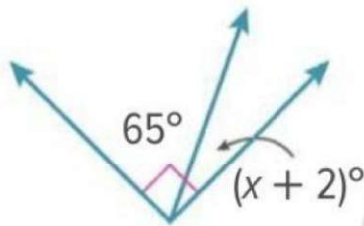
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Reveal



8.



A) Equation: $65 + (x + 2) = 90 \Rightarrow x = 23$

B) Equation: $65 + (x + 2) = 180 \Rightarrow x = 113$

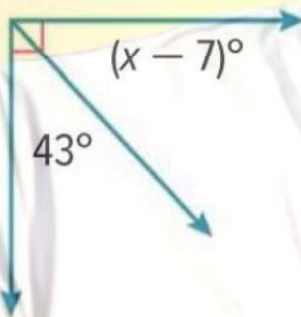
C) Equation: $65 + x + 2 = 90 \Rightarrow x = 25$

D) Equation: $x + 2 = 65 \Rightarrow x = 63$

$$65 + x + 2 = 90 \rightarrow x = 90 - 65 - 2$$

$$x = 25 - 2 \rightarrow x = 23$$

9.



A) Equation: $43 + (x - 7) = 180 \Rightarrow x = 144$

B) Equation: $43 + x - 7 = 90 \Rightarrow x = 40$

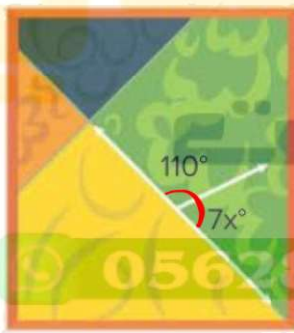
C) Equation: $43 + (x - 7) = 90 \Rightarrow x = 54$

D) Equation: $x - 7 = 43 \Rightarrow x = 50$

$$x - 7 + 43 = 90 \rightarrow x = 90 + 7 - 43$$

$$x = 97 - 43 \rightarrow x = 54$$

10.



A) Equation: $110 + 7x = 90 \Rightarrow x = -2.85$

B) Equation: $110 + 7x = 180 \Rightarrow x = 10$

C) Equation: $7x = 110 \Rightarrow x = 15.7$

D) Equation: $110 + 7x = 180 \Rightarrow x = 70$

$$7x + 110 = 180$$

$$7x = 180 - 110$$

$$7x = 70$$

$$x = \frac{70}{7}$$

$$= 10$$

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Grade

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Q6-MCQ 8-4

Refer to the floor plan. The scale of the floor plan is 1 inch = 6 feet. (Example 2)

3. Find the actual area of the hallway.



A) 30 sq ft * $A.l = l \times \text{Scale}$
 $= 5 \times 6 = 30$

B) 180 sq ft

C) 90 sq ft * $A.w = w \times \text{Scale}$
 $= \frac{1}{2} \times 6 = 3$

D) 15 sq ft * $\text{Area} = l \times w = 30 \times 3 = 90$

Refer to the floor plan. The scale of the floor plan is 1 inch = 6 feet. (Example 2)

4. Find the actual area of the kitchen.



A) 324 sq ft * $A.l = 6 \times 3$
 $= 18$

B) 54 sq ft

C) 108 sq ft * $A.w = 6 \times 3$
 $= 18$

D) 162 sq ft

* $\text{Area} = l \times w$
 $= 18 \times 18$
 $= 324$

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Q7-MCQ 8-4

Refer to the map of Florida. (Example 1)

1. What is the actual distance between Daytona Beach and Orlando? Use a ruler to measure the map. 2 units,



A) 26 miles

B) 78 miles

☒ C) 52 miles

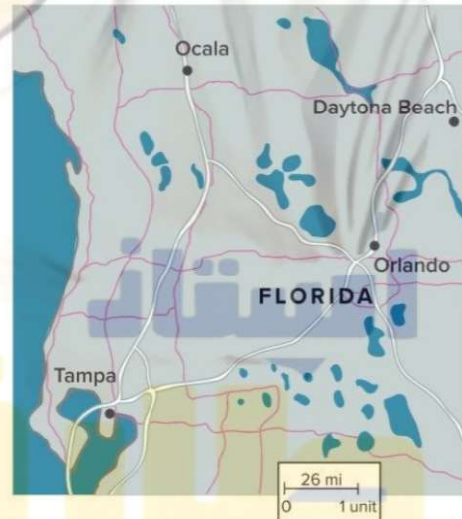
D) 104 miles

$$1 : 26 \text{ mile}$$

$$\begin{aligned} d &= l \times \text{scale} \\ &= 2 \times 26 \\ &= 52 \end{aligned}$$

Refer to the map of Florida. (Example 1)

2. What is the actual distance between Tampa and Orlando? Use a ruler to measure the map.


☒ A) 83.2 miles

B) 52.0 miles

C) 96.4 miles

D) 75.8 miles

3.2 units,

$$\begin{aligned} d &= 26 \times 3.2 \\ &= 83.2 \end{aligned}$$

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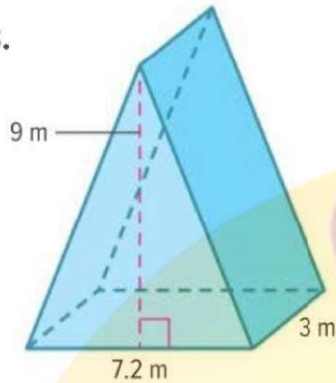
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Q8 -MCQ 9.4

Find the volume of each figure. Round to the nearest tenth if necessary. (Ex

3.



a) 27.2

$V = Bh$

b) 1.0

$= \frac{1}{2} b \Delta h \Delta h$

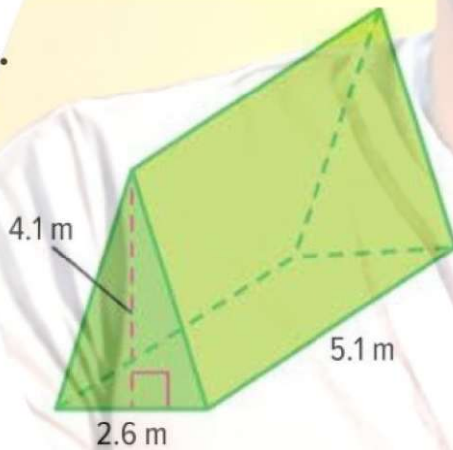
c) 97.2

$= \frac{1}{2} \times 7.2 \times 9 \times 3$

d) 15.6

$= 97.2$

4.



a) 27.2

$V = \frac{1}{2} b \Delta h \Delta h$

b) 1.0

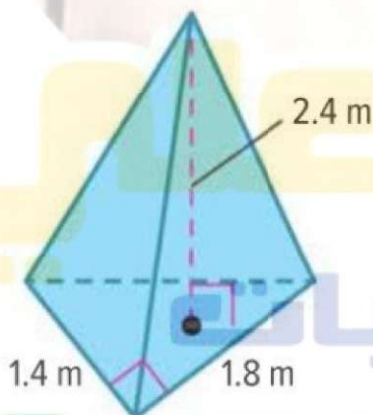
$= \frac{1}{2} \times 2.6 \times 4.1 \times 5.1$

c) 97.2

$= 1.3 \times 4.1 \times 5.1$

d) 15.6

5.



a) 27.2

$V = \frac{1}{6} b \Delta h \Delta h$

b) 1.0

c) 97.2

$= \frac{1}{6} \times 1.4 \times 1.8 \times 2.4$

d) 15.6

$= 0.4 \times 1.4 \times 1.8$

$= 1.0$

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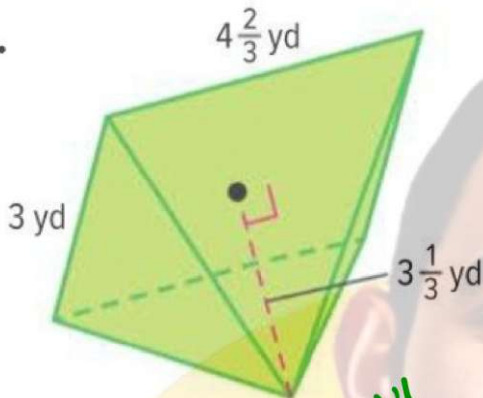
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6.



a) 27.2

Pyramid

b) 1.0

$$V = \frac{1}{3} l \times w \times h$$

c) 97.2

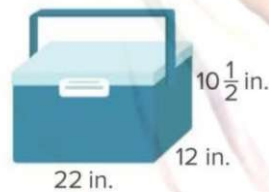
~~d) 15.6~~

$$\frac{1}{3} \times 3 \times 4 \frac{2}{3} \times 3 \frac{1}{3}$$

$$\frac{14}{3} \times \frac{10}{3} = \frac{140}{9} = 15 \frac{5}{9}$$

Q9-MCQ 9-4

1. A cooler is in the shape of a rectangular prism. What is the volume of the cooler? Round to the nearest tenth if necessary. (Example 1)

A) 2,640.0 in³

$$V = l \times w \times h$$

☒ B) 2,772.0 in³

$$22 \times 12 \times 10.5$$

C) 2,814.5 in³D) 3,124.0 in³

$$264 \times 10.5$$

2. A cereal box is in the shape of a rectangular prism. What is the volume of the cereal box? Express your answer as a decimal rounded to the nearest tenth if necessary. (Example 1)

A) 97.0 in³B) 169.1 in³☒ C) 169.8 in³D) 170.2 in³

$$V = 8 \times 1.75 \times 12.125 = 14 \times 12.125 = 169.75 \approx 169.8$$

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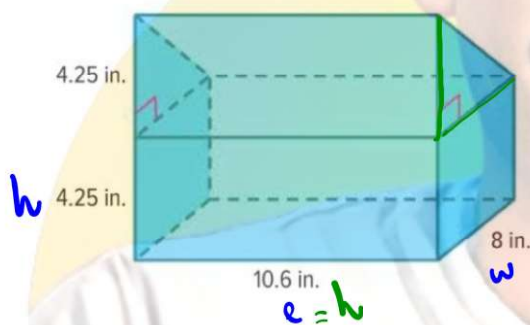
Reveal

**Q10-MCQ 9-4**

مكرر في السؤال الثامن والتاسع

Q11-MCQ 9-6

1. Mya's lunchbox is shown. What is the volume of the lunchbox? Round to the nearest tenth if necessary. (Example 1)



$$a) 14 \text{ in}^3$$

$$b) 10.8 \text{ in}^3$$

$$c) 31.5 \text{ in}^3$$

$$d) 540.6 \text{ in}^3$$

$$V_{\square} + V_{\triangle}$$

Prism

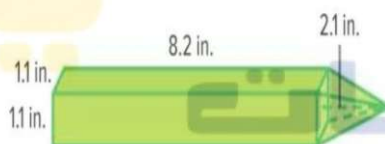
$$l \times w \times h + \frac{1}{2} b \times h \times l$$

$$V = 8 \times 10.6 \times 4.25 + \frac{1}{2} \times 8 \times 4.25 \times 10.6$$

$$\text{الترتيب} \quad 8 \times 11 \times 4 + 4 \times 4 \times 11$$

$$352 + 176 = 528 \quad \text{الترتيب}$$

2. Anson's toy rocket is shown. What is the volume of the rocket? Round to the nearest tenth if necessary. (Example 1)



$$a) 14 \text{ in}^3$$

$$b) 10.8 \text{ in}^3$$

$$c) 31.5 \text{ in}^3$$

$$d) 540.6 \text{ in}^3$$

$$V_{\square} + V_{\text{Pyramid}}$$

$$l \times w \times h + \frac{1}{3} l \times w \times h$$

$$1.1 \times 1.1 \times 8.2 + \frac{1}{3} \times 1.1 \times 1.1 \times 2.1 \approx 10.8$$

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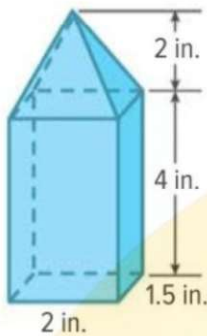
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3. What is the volume of the birdfeeder?
Round to the nearest tenth if necessary.

(Example 1)



$$a) 14 \text{ in}^3$$

$$b) 10.8 \text{ in}^3$$

$$c) 31.5 \text{ in}^3$$

$$d) 540.6 \text{ in}^3$$

$$V_{\text{rect}} + V_{\text{pyramid}} \\ l \times w \times h + \frac{1}{3} l \times w \times h$$

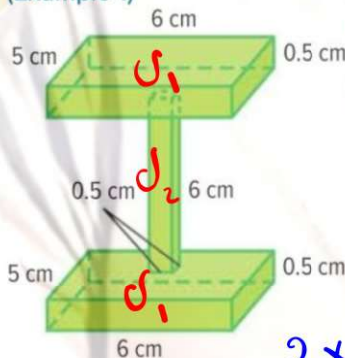
$$2 \times 1.5 \times 4 + \frac{1}{3} \times 2 \times 1.5 \times 2$$

$$3 \times 4 + \frac{1}{3} \times 3 \times 2$$

$$12 + 2 = 14$$

4. Zahir made this wooden perch for his pet bird. What is the volume of the bird perch?
Round to the nearest tenth if necessary.

(Example 1)



$$a) 14 \text{ cm}^3$$

$$b) 10.8 \text{ cm}^3$$

$$c) 31.5 \text{ cm}^3$$

$$d) 540.6 \text{ cm}^3$$

$$2V_1 + V_2$$

$$V = 2V_1 + V_2$$

$$2 \times l_1 \times w_1 \times h_1 + l_2 \times w_2 \times h_2$$

$$2 \times 0.5 \times 5 \times 6 + 0.5 \times 0.5 \times 6$$

$$1 \times 5 \times 6 + 0.25 \times 6$$

$$30 + 1.5 = 31.5$$

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Q12-MCQ 10-1

	Impossible 0	Unlikely 25	Equally 50 Likely	Likely 75	Certain 100
Description	not possible	having a poor chance of success	same chance of happening as not happening	having a good chance of success	sure to happen

The spinner shown is spun once. Classify the likelihood of each event as *impossible*, *unlikely*, *equally likely*, *likely*, or *certain*. (Example 1)

1. the spinner landing on *dog*

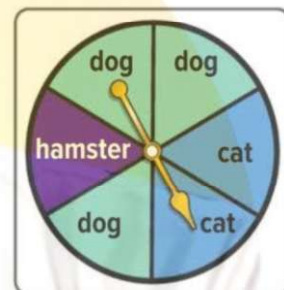
3 من 6 → 50%

A) Impossible

B) Unlikely

☒ C) Equally likely

D) Likely



2. the spinner landing on *hamster*

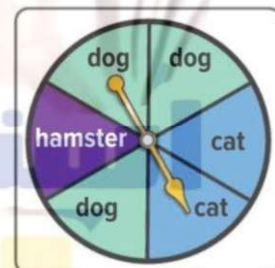
1 من 6

A) Impossible

☒ B) Unlikely

C) Equally likely

D) Likely



3. the spinner landing on *dog* or *cat*

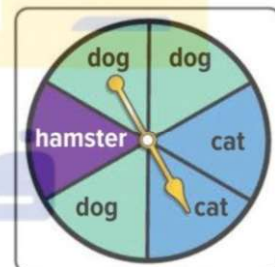
5 من 6

A) Impossible

B) Unlikely

C) Equally likely

☒ D) Likely



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Mr. Tarek Ali

سلسلة الطلوق في الرياضيات

Grade

7

Reveal

4. the spinner landing on *bird*

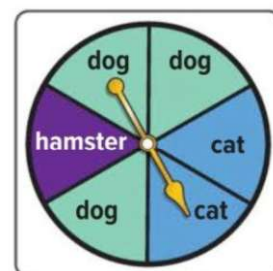
0 5F 6

☒ A) Impossible

B) Unlikely

C) Equally likely

D) Likely



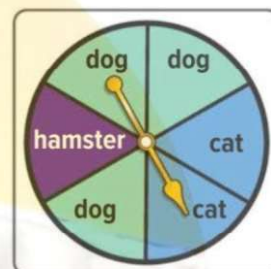
5. the spinner landing on an animal

6 5F 6

A) Impossible

B) Unlikely

C) Equally likely

☒ D) Certain6. the spinner landing on *cat* or *hamster*

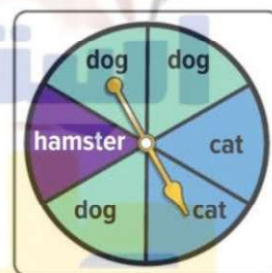
3 5F 6 → 50%

A) Impossible

B) Unlikely

☒ C) Equally likely

D) Likely



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Q13-MCQ 10-2

1. A spinner with four equal sections of blue, green, yellow, and red is spun 100 times. It lands on blue 14 times, green 10 times, yellow 8 times, and red 68 times. What is the relative frequency of landing on red? (Example 1)

a) Red: 0.14, Green: 0.68

☒ b) Red: 0.68, Green: 0.10

c) Red: 68, Green: 10

d) Red: $\frac{1}{4}$, Green: $\frac{1}{4}$

$$P(\text{red}) = \frac{\text{Part}}{\text{Total}} = \frac{68}{100} = 0.68$$

$$P(\text{green}) = \frac{10}{100} = 0.10$$

2. The frequency table shows the results of a survey about favorite exhibits. (Example 2)

Exhibit	Frequency
Butterfly	12
Dinosaurs	25
Planets	17
Trains	6

a) 10%

b) 20%

☒ c) 30%

d) 40%

Find the relative frequency that a randomly selected student's favorite exhibit was either butterflies or trains, as a percent.

or $\rightarrow (+)$

$$12 + 6 = 18$$

$$\text{Total} = 12 + 25 + 17 + 6 = 60$$

$$P(\text{butterflies or trains}) = \frac{18}{60} \times 100\% = \frac{18 \times 10}{6} \% = 30\%$$



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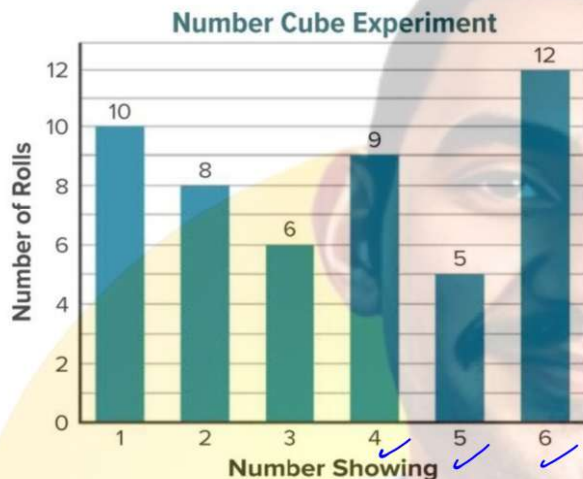
Grade

7

Reveal



3. The graph shows the results of an experiment in which a number cube labeled 1 through 6 is rolled a number of times.



Find the relative frequency of rolling a number greater than 3. (Example 3)

a) 0.24

b) 0.48

✓ c) 0.52

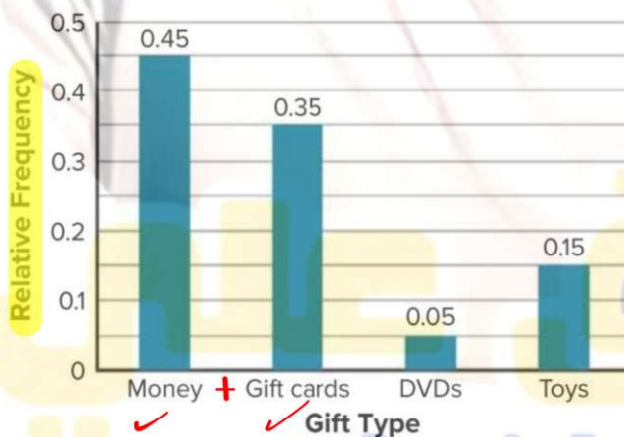
d) 0.76

$$9 + 5 + 12 = 26$$

$$\text{Total} = 10 + 8 + 6 + 26 = 50$$

$$P = \frac{26 \times 2}{50 \times 2} = \frac{52}{100} = 0.52$$

4. A random selection of students was asked the question "What type of gift did you last receive?" and the results were recorded in the relative frequency bar graph.



What is the experimental probability that a student chosen at random received a gift card or money? (Example 4)

a) 0.35

b) 0.45

c) 0.70

✓ d) 0.80

$$\text{relative} = P$$

$$0.45 + 0.35$$

$$= 0.80$$

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Q14-MCQ 10.3

- 5.** The table shows the lengths of time for rides at a fair. Zane will choose a ride at random and wants to find the probability of choosing a ride that lasts less than 200 seconds. **What is the probability of the complement of the event?**

Ride	Time(seconds)
Barrel	150 ✓
Bumper Cars	195 ✓
Circus Carousel	210
Log Ride	120 ✓
Roller Coaster	55 ✓
Swings	225
Train	300
Zero Gravity Spinner	65 ✓

5

a. $\frac{5}{8}$

b. $\frac{3}{8}$

c. $\frac{1}{2}$

d. $\frac{1}{8}$

$$\text{part} = 5, \text{ Total} = 8 \rightarrow p = \frac{\text{part}}{\text{Total}} = \frac{5}{8}$$

$$p(\text{complement}) = 1 - \frac{5}{8} = \frac{8}{8} - \frac{5}{8} = \frac{3}{8}$$

- 6.** Red is spun on a spinner with five equal-size sections labeled red, yellow, blue, green, and purple. What is the probability of the complement of the event? Describe the complement.

$$\text{Total} = 5$$

$$\text{red} = 1$$

$$p(\text{complement}) = 1 - \frac{1}{5} = \frac{5}{5} - \frac{1}{5} = \frac{4}{5}$$

a. $\frac{1}{5}$

b. $\frac{4}{5}$

c. $\frac{2}{5}$

d. $\frac{3}{5}$

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Grade

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Reveal



7. A sportscaster predicted that the local high school baseball team has a 75% chance of winning tonight. Select the values that represent the probability of the team **not winning**.

- a. 75%
b. 100%
c. 25%
d. 0%

$$\begin{aligned}
 P(\text{not}) &= P(\text{complement}) \\
 &= 1 - 0.75 = 0.25 \\
 &\rightarrow 0.25 \times 100\% = 25\%
 \end{aligned}$$

Q15-MCQ 10.3

3. A teacher placed the letter cards E, L, O, R, U, and W in a bag. A card is drawn at random. Determine the theoretical probability for drawing a card that has a vowel on it. (Example 2)

- (a) $\frac{1}{6}$
(b) $\frac{1}{3}$
(c) $\frac{1}{2}$
(d) $\frac{2}{3}$
- Vowel = 3
Total = 6
 $P = \frac{3}{6}$
 $\frac{3 \times 1}{3 \times 2}$
 $= \frac{1}{2}$

4. A player in a board game rolls a six-sided number cube labeled 1 through 6 once. Determine the theoretical probability of rolling a 1 or 2. (Example 2)

- (a) $\frac{1}{6}$
(b) $\frac{1}{3}$
(c) $\frac{1}{2}$
(d) $\frac{2}{3}$
- Total = 6
Part = 2
 $P = \frac{2 \div 2}{6 \div 2}$
 $P = \frac{1}{3}$

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Grade

7

Reveal



Q16-MCQ 10.3

8. A pet store is having a prize give-away. The spinner shows the type of toy a customer can win for their pet. If a customer spins the spinner and it lands on cat, they will win a free cat toy. If the spinner is spun 540 times throughout the day, **about how many dog or cat toys are expected to be given away?**



- a. 378
b. 270
c. 108
d. 486

$$\text{dog} + \text{cat} = 2 + 5 = 7$$

$$\text{Total} = 10$$

$$\text{① } P = \frac{7}{10}$$

$$\text{② How many } \frac{7}{10} \times 540$$

$$7 \times 54 = 378$$

9. The letters from the word **FOOTBALL** are written on 8 cards with one letter on each card. One card will be drawn randomly and then placed back into the stack. If this experiment is repeated 840 times, about how many times should you expect to draw a consonant?

- a. 315
b. 420
c. 735
d. 525

$$\text{Consonant} = 5$$

$$\text{Total} = 8$$

$$\text{① } P = \frac{5}{8}$$

$$\text{② How many } \frac{5}{8} \times 840 = 5 \times 105 = 525$$

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Grade

7

Reveal



Q17-MCQ 10.3

1. The spinner shown is spun once. What is the sample space? (Example 1)

(a) {2,3,4,5}

(b) {2,3,4,5,5}

✓ (c) {1,2,3,4,5}

(d) {2,3,4}

write All without repeating.



2. Each letter in the word MISSISSIPPI is written on a piece of paper and placed into a bag. A letter is drawn at random. What is the sample space? (Example 1)

(a) {M,I,S,S,I,S,S,I,P,P,I}

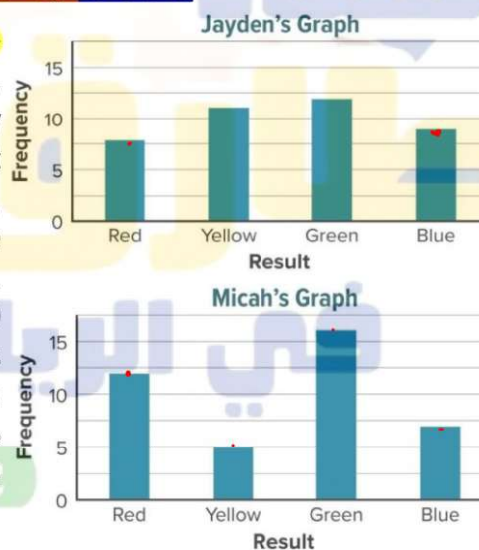
✓ (b) {M,I,S,P}

(c) {M,I,S}

(d) {P,I,S}

Q18-MCQ 10.4

Jayden spins a spinner with four equal-size sections labeled red, yellow, green, and blue, 40 times. Micah randomly selects one marble from a bag that contains an equal number each of red, yellow, green, and blue marbles. He replaces the marble and selects again. Micah repeats this experiment 40 times. Each student records their results in a frequency bar graph. Which student's graph best represents the results that can be expected from each experiment?



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Grade

7

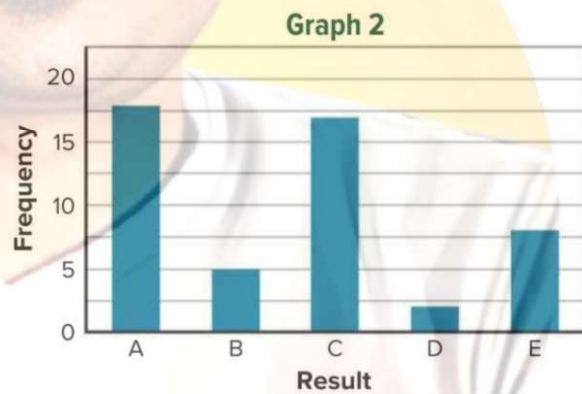
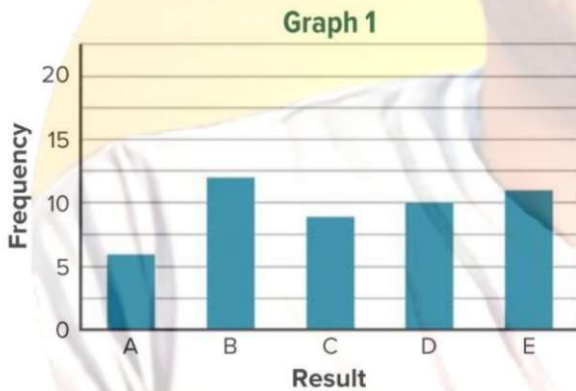
Reveal



- a. both students كلا الطالبين
b. neither Jayden nor Micah لا أحد منهما
c. Micah graph رسم ميكا
d. Jayden رسم جايندن

2. Open Response Two experiments are conducted and their results are recorded in frequency bar graphs.

Experiment 1	Experiment 2
A spinner with equal-size sections of A, B, C, D, and E is spun 50 times.	A card is randomly selected from a bag containing five A cards, three B cards, four C cards, one D card, and two E cards. The card is then placed back in the bag. There are 50 trials.



Which graph best represents the results that can be expected from Experiment 1?
Experiment 2?

↳ graph 2

↳ graph 1

- a. both graph 1 and 2 كلا الرسمين 1 و 2
b. only graph 1 فقط الرسم 1
c. only graph 2 فقط الرسم 2
d. neither graph 1 nor 2 لا الرسم البياني 1 ولا 2

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Grade

7

Reveal



Q19-MCQ 10.5

3. The spinner shown has six equal-size sections and is spun twice.
What is the probability that the product of the numbers spun is 12?



- (a) $\frac{2}{36}$ $2 \times 6, 6 \times 2 \rightarrow \boxed{4}$
 (b) $\frac{3}{36}$ $3 \times 4, 4 \times 3 \rightarrow \boxed{4}$
 (c) $\frac{4}{36}$ $\text{Total} = 6 \times 6 = 36$
 (d) $\frac{5}{36}$ $P = \frac{4}{36}$

4. A number from 0 to 9 is randomly selected and then a letter from A to D is randomly selected. What is the probability that the number 3 and a consonant are selected? (Example 4)

- (a) $\frac{2}{40}$ $* A, B, C, D \Rightarrow 4$
 (b) $\frac{3}{40}$ $\text{Consonant} \rightarrow B, C, D \rightarrow \boxed{3}$
 (c) $\frac{1}{20}$
 (d) $\frac{1}{10}$ $* 0 \rightarrow 9 \Rightarrow 10$

$$\text{Total} = 4 \times 10 = \boxed{40}$$

$$P = \frac{3}{40}$$

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Q20-MCQ 11.1

The table shows various valid sampling methods.

	Definition	Example
Simple Random Sample بسيط	Each item or person in the population is as likely to be chosen as any other.	Twenty-five student names are written on slips of paper and placed in a basket. One name is randomly selected.
Stratified Random Sample طبقية	The population is divided into groups with similar traits that do not overlap. A simple random sample is then selected from each group.	Students of a school are divided into 6th, 7th, and 8th grade. A random sample of 25 students from each grade is chosen.
Systematic Random Sample منتظمة	The sample is selected from the population according to a specific item or time interval.	Every 10th customer at a store is given a survey, or a customer is chosen to complete a survey every half hour.

1. For each sampling description, identify the valid sampling method that best describes it. Choose from *simple random sample*, *stratified random sample*, or *systematic random sample*. (Example 1)

- a. To determine if a candidate for state senator is popular with voters, 25% of voters in 160 counties are surveyed.

✓ Stratified
Random
Sample

Simple
Random
Sample

Systematic
Random
Sample



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Grade

7

Reveal



- b. To determine whether students think a new school library is needed, a computer generates a list of 100 random students and they are surveyed.

Stratified
Random
Sample

✓ Simple
Random
Sample

Systematic
Random
Sample

- c. To determine the freshness of doughnuts, a baker selects a doughnut every 30 minutes and checks it.

Stratified
Random
Sample

Simple
Random
Sample

✓ Systematic
Random
Sample

Learn Biased Samples

غير متجانس

An **unbiased sample** is obtained using a valid sampling method that is random and is representative of the population.

When a sample is *not* representative of the population, it is a **biased sample**. A biased sample usually **favors one or more parts** of the population over another.

آثار من موضوع - متى حدد

The table shows **two types of biased samples**: **convenience sample** and **voluntary response sample** and the reasons why each is biased.

منه

2. Identify the type of biased sample for each situation. Choose from *convenience sample* or *voluntary response sample*. (Example 2)

- a. A physical education teacher posts an online survey about whether students would be interested in a 5K race. The responses received determine whether there will be a 5K race.

a. Convenience sample

b. Voluntary response sample

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Grade

7

Reveal



b. To determine the theme of the school dance, the student council president surveys his homeroom class.

- a. Convenience sample
b. Voluntary response sample

Q21-MCQ 11.2

3. The superintendent of a school district wants to predict next year's middle school lunch count. The graph shows the results of a survey of randomly selected middle school students. If the district has 5,000 middle school students next year, about how many students plan to buy lunch 1-2 days a week? (Example 2)

How Many Days Will You Buy Lunch?



- a. 720 b. 30 c. 152 d. 1850

$$\frac{37}{100} \times 5000 = 37 \times 50 = 1850$$

4. The guidance department conducted a random survey of the student body and found that 16% of the students plan to volunteer at the school festival. Predict how many volunteer positions they should plan for a population of 950 students. (Example 2)

- a. 720 b. 30 c. 152 d. 1850

$$\begin{aligned} \frac{16}{100} \times 950 &= \frac{16}{10} \times 95 \\ &= 1.6 \times 95 \\ &= 152 \end{aligned}$$

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7

Reveal



5. The owner of a travel agency randomly surveyed its customers. The survey showed that 55% of the agency's customers were planning an overseas vacation the following year. Predict how many of the travel agency's 12,400 travelers will vacation overseas the following year. (Example 2)

a. 720

b. 3230

c. 1752

d. 6820

$$\frac{55}{100} \times 12400 = 55 \times 124 = 6820$$

A student was solving the problem below and found the answer to be 92,500 customers.

An unbiased survey showed that 74% of a pet supply's online customers spent at least \$100 on their pets each year. Predict how many of the 125,000 online customers will spend less than \$100 on their pets next year.

قام طالب بحل المسألة أدناه، ووجد أن الإجابة هي 92,500 عميل. أظهر استطلاع رأي محايد أن 74% من عملاء متجر مستلزمات الحيوانات الأليفة عبر الإنترنت ينفقون 100 دولار على الأقل على حيواناتهم الأليفة سنوياً. توقع كم من بين 125,000 عميل عبر الإنترنت سينفقون أقل من 100 دولار على حيواناتهم الأليفة في العام المقبل.

Choose the correct sentence that best suits the student's solution.

اختر الجملة الصحيحة التي تناسب حل الطالب.

- a. The student's solution is correct because he multiplied the percentage of those who will spend at least \$100 (74%) by the total number of customers.

حل الطالب صحيح لأنه ضرب نسبة الذين سينفقون على الأقل 100 دولار (74%) بالعدد الكلي للعملاء

- b. The student's solution is incorrect because he used proportionality in the solution

حل الطالب غير صحيح لأنه استخدم مبدأ التناسب في الحل

- c. The student's solution is incorrect because he should have multiplied the percentage of students who spend less than \$100 (26%) by the total number of customers

حل الطالب غير صحيح لأنه كان عليه أن يضرب نسبة الطلاب الذين ينفقون أقل من 100 دولار (26%) مع العدد الكلي للعملاء

- d. We cannot determine how the student solved the problem

لا نستطيع تحديد كيف حل الطالب المسألة

$$* \frac{74}{100} \times 125000 = 74 \times 1250 = 92500 \quad | \quad * 100 - 74 = 26$$

$$* \text{less } 100 \$ = 125000 - 92500 = 32500$$

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Grade

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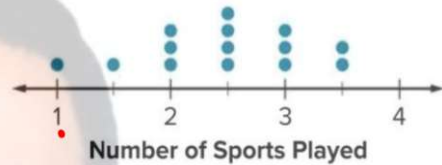
Reveal



Q22-MCQ 11.3

1. The dot plot displays data from 14 random samples, each consisting of 30 middle school students. Each dot represents the mean number of sports played per year by students in the sample. (Example 1)

Means of Samples



- a. Which number best represents the mean number of sports played by middle school students?

a. 32

b. 2.5

c. 175

d. 0.54

$$\text{mean} = \frac{\text{Sum}}{\text{Count}}$$

$$= \frac{1 + 1.5 + 2(3) + 2.5(4) + 3(3) + 3.5(2)}{14}$$

$$= \frac{34.5}{14} = 2.46 \approx 2.5$$

- b. Find and interpret the variability in the distribution.

a. 32

b. 2.5

c. 175

d. 0.54

MAD

$$* \text{mean} = 2.5$$

$$* \text{Subtract} \rightarrow \text{All } (+) [\text{numbers} - \text{mean}]$$

$$1 - 2.5 = 1.5$$

$$1.5 - 2.5 = 1$$

$$2 - 2.5 = 0.5$$

$$2.5 - 2.5 = 0$$

$$3 - 2.5 = 0.5$$

$$3.5 - 2.5 = 1$$

$$* \text{MAD} = \frac{\text{Sum}}{\text{Count}} = \frac{1.5 + 1 + 0.5(3) + 0(4) + 0.5(3) + 1(2)}{14} = 0.54$$

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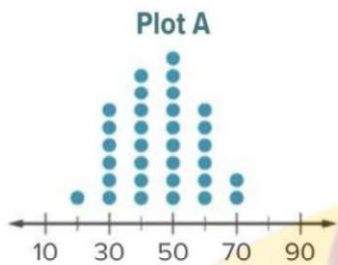
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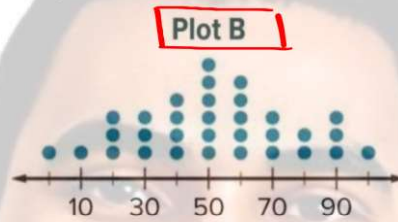
Reveal



2. Open Response Below are two dot plots containing sample means from the same population.



Count → Plot B



a. 32

b. 25

c. 15

d. 54

A. How many samples are represented in each plot? How do you know?

B. Which dot plot has higher variability? Defend your answer.

- a) Plot A; the data points are more spread out.
- b) Plot B; the data points are more concentrated.
- c) Plot A; the data points are more clustered in the middle.

d) Plot B; the data points are more spread out. **البيانات أكثر انتشاراً**

C. One plot contains samples of size 25, and the other plot contains samples of size 60. Which dot plot contains the samples of size 60? How do you know?

- a) Plot A; because it appears more spread out.
- b) Plot B; because it has more dots shown (25).
- c) Neither plot contains a sample size of 60 based on the number of dots shown.
- d) Plot A; because it has fewer dots shown (20).

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Grade

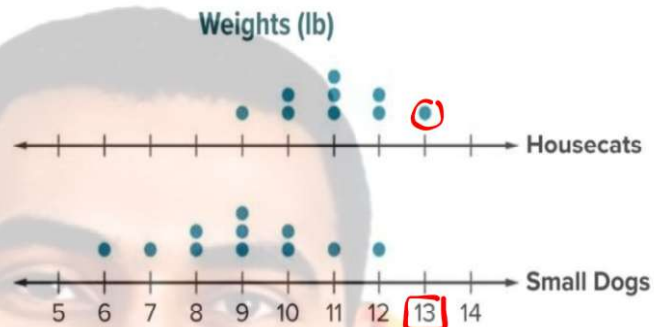
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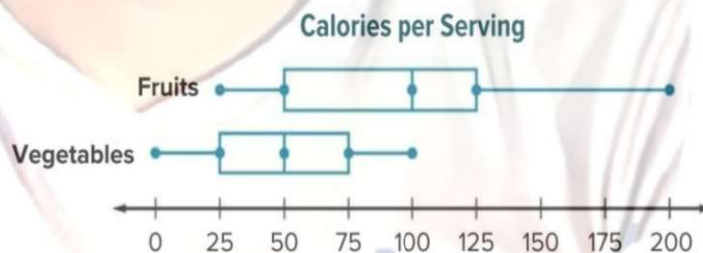
Q23-MCQ 11.4

1. The double dot plot shows the weights in pounds of several housecats and small dogs. Compare their centers and variability. What are some appropriate inferences you can make about the data? (Example 1)



- a) Housecats are generally heavier than small dogs, and their weights have higher variability.
- b) Small dogs are generally heavier than housecats, and their weights have higher variability.
- c) Housecats and small dogs have similar weights and similar variability.
- d) Small dogs are generally lighter than housecats, and their weights have lower variability.

2. The double box plot shows the number of Calories per serving for various fruits and vegetables. What are some appropriate inferences you can make about the data? (Example 1)



- a) Vegetables generally have more calories per serving than fruits, and the calorie count for fruits is less variable.
- b) Fruits generally have more calories per serving than vegetables, and the calorie count for vegetables is less variable.
- c) Fruits and vegetables have a similar range of calories per serving.
- d) Vegetables have a higher median calorie count than fruits.

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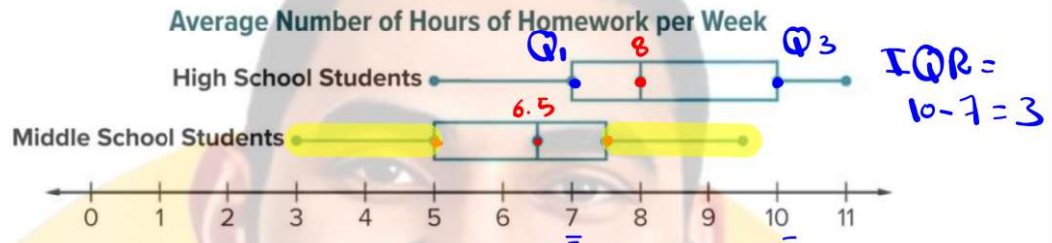
Grade

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Reveal



3. **Table Item** The double box plot represents the average number of hours of homework each week for high school students and middle school students. Use the measures of center and variability of these samples to select the age group(s) to which each statement applies.



	Middle School	High School
The median is greater. <i>أكبر</i>		✓
The IQR is 2.5. $= Q_3 - Q_1 = 7.5 - 5 = 2.5$	✓	
The data have greater variability.		✓
A person from this sample is more likely to have more than 7 hours of homework a week.		✓
The data are more symmetric. <i>متماثل (left = right)</i>	✓	



* $IQR = Q_3 - Q_1$

third quartile

First quartile.

$Q_{23} = Q_{24} = Q_{25}$

مكرر

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منصة طارق أكاديمي للرياضيات

Tarek Academy

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IN

Math

$\pi = 3.14$

$A = \frac{ab + c}{d}$

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$a^2 + b^2 = c^2, c = \sqrt{a^2 + b^2}$

$c^2 + a^2 = b^2, c^2 - b^2 = a^2$

$a^2 = 2a$

$f(a + b) = c$

$(x + y)^2 - (x - y)$

$+ 2c = 1$

$\frac{a}{c} = \frac{HB}{a}$

$Me =$

MATH

خاص بالمنصة



خاص بجميع الجروبات و القنوات



استاذ / طارق علي