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The Effect of Teaching Mathematics using Interactive Video Games on the Fifth Grade Students' Achievement

أثر تدريس الرياضيات باستخدام ألعاب الفيديو التفاعلية في تحصيل طلبة الصف الخامس

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Abstract

The aim of this study is to investigate the effect of teaching math subject using interactive video games on the fifth grade students' achievement. This study was conducted in one basic private school in Jordan. It used a quasi- experimental control group design. Interactive video games software was developed to investigate the difference between the two groups that were given a pre-test and a post-test to measure their achievements in math. The results of the study showed that the learning environment in math using interactive video games have a positive effect on fifth grade students' math achievements. The study showed a progress on the part of the experimental group which used interactive video games software. It was reflected positively in the fifth grade students' achievement in math.

Keywords: interactive video games, educational technology, teaching math.

ملخص

هدفت هذه الدراسة إلى استقصاء أثر تدريس مادة الرياضيات باستخدام ألعاب الفيديو التفاعلية في تحصيل طلبة الصف الخامس. وقد أجريت هذه الدراسة في إحدى المدارس الأساسية الخاصة في الأردن، وقد استخدمت الدراسة التصميم شبه التجريبي لتحقيق أهداف الدراسة. تم استخدام وتطوير برنامج حاسوبي تفاعلي باستخدام ألعاب الفيديو، لمعرفة الفروق بين المجموعتين التجريبية والضابطة في تحصيلهم في مادة الرياضيات، بعد أن أخضعت المجموعتان لاختبارين قبلي وبعدي. وقد أظهرت نتائج الدراسة أن بيئة التعلم وفق ألعاب الفيديو التفاعلية قد تركت أثراً إيجابياً في تحصيل طلبة الصف الخامس في الرياضيات ولصالح المجموعة التجريبية، حيث أظهرت الدراسة تطوراً ملحوظاً في أداء المجموعة التجريبية باستخدام ألعاب الفيديو التفاعلية والذي كان له الأثر الإيجابي في تحصيلهم في مادة الرياضيات.

الكلمات المفتاحية: ألعاب الفيديو التفاعلية، تكنولوجيا التعليم، تدريس الرياضيات.

Introduction

Learning is a process for creating knowledge and life experience to use it and apply it in life situation (Steinkuehler, 2010). In traditional way of teaching, ideas are presented in theoretical way without sufficient opportunities for students to engage in class activities such as: problem solving, games, and lab experiments (Euler, 2011). Students have associated the feeling of success in school with fun because it motivated them. At the same time having fun during learning process varied depending on the type of class activity (Sullivan, 1993). Using activity make students feel skillful in mathematics classroom subject are more confident in learning, task- involve, and motivated to learn (Kloosterman & Gorman, 1990).

Technology has become an essential tool for teaching mathematics in today's world. It can be used in a variety of ways to enhance the learning process. Evolution of teaching mathematic is moving toward using computer application. It provided new ways to represent mathematical information and offering more choices about learning content. Video games as a choice to introduce new math content, viewed as a strategy to motivate students and as a successful way to introduce new lessons (Koc, 2005).

Researchers have found that using technology to introduce new ideas

can help teachers: build upon students' prior knowledge and skills, emphasize the connections among mathematical concepts, connect abstractions to real-world settings, and introduce more advanced ideas (Bransford, Brown, & Cocking, 1999). The new era of technology provided more opportunity to create a good learning environment in teaching mathematics. Technology supports education by providing teachers and students with tools that create opportunities to enhance mathematics learning and by having more learning activities. In the other hand, traditional way of teaching mathematics that focuses on teacher-centered is still dominate in classrooms instruction (European Commission, 2007). Teaching math using technology as a learning tool has specific standards such as: technology can facilitate mathematical problem solving and communication skills; can provide students with opportunities to explore different representations of mathematical ideas (NCTM, 2000).

Interactive Video games strategy promotes learning and reduces the teaching time for new ideas or topics (Van Eck, 2006). It helps students improve their cognitive, social, and moral attitudes. It also, helps students to be more creative and independent (Zavaleta et al., 2005). This strategy can build valuable students skills such as strategic thinking, planning, communication, negotiating skills, and data-handling (Kirriemuir & Mcfarlane, 2004). Games have been presented by many educators as a good learning tool that supports mathematics classroom instruction (Gough, 1999). Mathematical video games are 'activities' that involve a challenge for students, have a set of rules to follow, have different choices, and have a set of cognitive objectives (Oldfield, 1992).

To gain greatest benefits of using video games, teachers should do the following: encourage competition, Target an important academic content, provide opportunities for students to examine their improvements and enjoy playing (Robert, 2010).

Video interactive games motivate students to spend time on task to master the required skills. The literature reveals that the educational video games design should include different elements, such as narrative context, rules, goals, rewards, and interactivity game design should have

procedures to assess students progress and feedback activities (Dondlinger, 2007). Using educational video games as an educational software method consider as an important tool in understanding new concepts, which make it easy and motivated to learn (Akpinar, 2005). It is a good learning method when it built to incorporate with learning principles and goals (Gee, 2005). For video games to be more efficient on learning process it should have a cultural educational potential and content that understood by the students (Roach, 2003). It helps students learn science by exploring chemical processes and creating materials that difficult to work directly in real life situation (Ronan & Eliahu, 2000). There are many educational benefits of using video games in teaching such as: provide a meaningful learning situations, support students to build a positive attitude such as providing opportunities for students, motivate students to learn, build a self-concept and developing positive attitudes towards mathematics, increase learning by adding more formal activities, create more interaction between students, give students opportunities to self assessments, and improve students problem solving skills. It consider as interactive learning tasks for both school and home and allow students to operate at different levels, and make students can work independently (Davies, 1995).

Video games need to be sufficiently challenging by having different game levels to engage students in the learning process. These levels should be flexible, changing as students become more proficient in one level. Teachers should monitor students' use of these materials to make sure that they follow the structure and rules of the game, because students need guidance and opportunities to reflect on their work. Using interactive video games in the classroom is associated with the improvements in student achievement (Haystead, & Marzano, 2009). Interactive video games that designed by using different Multimedia Tools items are highly motivated and interactive, with many user-controlled features. Video games have different levels of difficulty. The importance of these levels is to create challenge in a game that suitable to student's skill. It helps students by starting with a subset of skills and adding additional skills as the earlier ones are mastered (Rieber, 2005).

Educational software divided into five types: tutorial, drill and practice, simulation, educational games, and hypermedia type (Ozman, 2004). There are different video games to perform a specific math task and train students to solve math problems such as: Treasure Hunt, Puzzles, and Tic-Tac-Toe Board. Using the video game strategy to teach math helped educator to reinforce academic mathematic standards (Gee, 2003).

Research in Interactive Video Games

In order to present the research problem the researcher reviewed relevant research in the field of using interactive video math games on teaching and learning process. Blazenka and Damir (2011) examined (27) research that looked into the impact of interactive video games on the realization on educational games. He found that most research papers indicated a positive effect of using interactive video games to teach math. It also creates students positive attitude toward math and it should be part teaching strategy of math topics for all students' levels. Hamari & Edwards (2016) conducted a survey targets 173 Players of two games; Quantum Spectra and Spumone. They examined the impact flow, engagement, and immersion on learning. They found a positive effect of engagement on learning. Moreover, they found that the challenge in the game affects learning positively and skillfulness in gaming does not affect learning directly, but increases engagement. Huang & Wu (2015) explored motivation of a primary school students regard learning mathematics by using digital game-based learning. To accomplish that, they relied on motivation theory for analysis and a questionnaire for data collection. The study revealed that learners who experienced digital game-based learning are positively motivated.

Kim and Chang (2010) examined the effects of playing math video games on the achievement of 4th graders, focusing on gender and language minority groups. The study used the 2005 National Assessment of Educational Progress (NAEP), a nationally representative database of the USA. The study performed regression analyses using more than 170,000 U.S. 4th grade students. The study specified three models for analyses: ELL- Model, Gender Model, and Interaction Model. The results showed that students who used video math games every day

showed significantly lower achievement than those who never used math game to learn math. In the other hand, male students who used video games have positive effects on their achievements. Al-Mashaqbeh & Al Khawaldeh (2009) investigated the effects of traditional teaching instruction versus computer-assisted instruction using educational software in an educational software design course. The finding of the study indicated that the students in the experimental group demonstrated better performance over the students in the control group students.

Papastergios (2009) found on his research that teaching with computer games more efficient on motivated students to learn and increase their knowledge. Cengiz (2009) studied the effect of using video game to support traditional teaching strategy on pre-service teachers' achievements in chemistry and their attitude and motivation toward learning. The study found that teaching environments that supported with computer games have positive effect on students' achievements and attitude toward leaning.

Ke (2008) conducted a study during the summer math camp. Students (4th and 6th graders) play educational math computer games during camp activities. At the end of the camp period, their math ability was measured. At the post-test, it found no significant effect of math computer games on students' achievement. Fengfeng (2008) examined the effect of using video games on fourth grade students' math achievements. The finding of his study indicated that students develop a positive attitude toward using video games to learn math, but no significant effect on students' performance. Chritakis, Ebel, Revara, & Zimmerman (2004) study the purpose of the use of the video games. It found that the use of the video games is to support students learning by using these activities as a drill and practice format. The students either practice repetitive skills or rehearse memorized facts. Lee, Luchini, Michael, Norris & Soloway, (2004) found that a math video game encouraged students to complete a greater number of problems at different levels of difficulty. Students who use math video game completed solving nearly three times the number of problems compares to students using paper worksheets. Salen and Zimmerman (2004) found

on their research that elementary and secondary students use computer games. Girls use it for five hours a week, in the other hand boys use computer games for thirteen hours a week. Laffey, Espinosa, Moore, & Lodree (2003) studied the effect of computer math games on at-risk pre-school children and first grade students. He found that a significant improvements of students math achievement and they play more attention Rosas, Nussbaum, Cumsille, Marianov, Correa, & Flores (2003) studied the effect of video game on students' motivation to learn. They found a positive effect of video games on the motivation of 1st and 2nd grades students. Roschelle, Pea, Hoadley, Gordin, & Means (2000) study the benefits of the use of computer-based math classroom. The finding of the study indicates that it support learning process, and it could be useful in developing students' higher-order skills of critical thinking and analysis. Computer-based math can be used to improve students understand the core concepts in math, science, and literacy. This tool help students builds confidences on their learning and it is a great tool for remediation slower learners. Amory, Naicker, Vincent, & Adams (1999) study different computer game types and the important elements that motivate students to play. It found that students were more motivated to play computer games with objectives that require higher order thinking skills to improve their creative problem solving and decision-making skills. Many research (Prinsky, 2001, Mitchel and Savill-Smith, 2004, Van Deventer and White, 2002, and BECTA, 2001) focused on the advantages of using video games in teaching process. They found that there are many advantages such as: increase students learning skills, motivate students to learn, increase their cognitive development, improve their problem solving skills, and improve their collaboration skills

Purpose of the Study

Interactive video games are highly motivating and engaging, and it is an effective tool to support learning. Researchers as mentioned before have studied interactive video games to determine how it can effectively support learning. This research emphasizes that interactive video games can be used to support learning and to improve fifth grade students' achievements in math. The purpose of this study was to investigate the

effect of teaching math subject using interactive video game on the fifth grade students' achievement. This study finding to answer the following questions:

1. Is there a significant difference between the achievements of the control group who used traditional teaching instruction and the experimental group who used interactive video games)?
2. Is there a significant difference in students' achievements of the experimental group who used interactive video games)?

Study hypotheses

The following hypotheses were tested at 0.05 significance levels

1. There are a significant difference at ($\alpha \leq 0.05$) in students' achievements test between the control group who used traditional teaching instruction and the experimental group who used interactive video games attributed to the teaching method.
2. There are statistically significant differences at ($\alpha \leq 0.05$) in students' achievements (experimental group) that used the interactive video games attributed to the teaching method.

Significance of the study

The significance of this study comes from the fact that Technology can support education by providing teachers and students with tools that create opportunities to enhance mathematics learning and by having more learning activities.

This study is one of the important studies that used a blended learning between education and technology, by using computer video games in teaching mathematics in the classroom, which will give a clear idea for teachers how to implement this strategy in the classroom and encourages them to implement this strategy during their teaching.

In the other hand, results of this study can be used in developing math curricula, developing school text books contents, improving methods of teaching mathematics and gives curricula designers a chance

to design mathematics curricula based on interactive video games, which will affect students' achievement and their motivation.

Study limitations

- The study was limited on the fifth grade students at Al-Hasad privet school in the second semester of the school year 2014-2015.
- The study was limited on (measurements & geometry) units from the fifth grade mathematics text book.
- Results of this study is limited on the range of accuracy and suitability of the instruments used in this study.

Study definitions

Interactive Video Games: Mathematical interactive video games are 'activities' based on computer, that involve a challenge for students, have a set of rules to follow, have different choices, and have a set of cognitive objectives.

Achievement: Outcomes of the student's learning after a period of studying the subject, and their ability to remember, understand and apply the content, measured by the student's mark in the achievement test which conducted by researchers.

Method

This study is a quasi- experimental research design taken from pre and post test group. This is a two group design, where one group is exposed to a treatment and the results are tested while a control group is not exposed to the treatment and similarly tested in order to compare the effects of treatment (Campbell and Stanley, 1963).

Sample

The present study was conducted in the second semester of the school year 2014-2015. The sample of the study consisted of fifth grade students at Al- Hasad privet school in Jordan. Participants of this study consist of (50) fifth grade students; 25 in the control group, 25 in the experimental group. The control group used traditional teaching

instruction and the experimental group used interactive video games teaching instruction. The experiment lasted for two months.

Instrumentation

To achieve the aims of the study, the researchers design Interactive Video Math Game Software and an achievement test:

The Interactive Video Math Game Software

When the Interactive Video Math Game Software was designed a several components were taken into consideration such as:

- The video games was appropriate to meet fifth grade students' learning needs
 - A game manual was made available to assist the students.
 - Different kinds of multimedia were used to motivate students.
 - The software contain many different games to motivate students.
 - The feedback after each game was consistent and clear.
 - It consists of games that focused on fifth grade needed skills (counting, additions, shapes, subtraction, and ordering numbers).
- Appendix (1)

The Achievement Test

The researchers used an achievement test to measure the fifth grade students' achievement on math. The test in its final shape consisted of (25) multiple choice items. The test was built based on specification table, divided to different levels: Like conceptual understanding, procedural knowledge and high level skills. The pre-test was given to ensure that the control group was similar to the experimental group in their previous math skills.

To ensure the validity of the achievement test, a panel of five experts in teaching math reviewed the test items and offered some suggestions to enhance the test validity. To assess the reliability of the test, a pilot study was implemented on the subjects out of the sample. Three weeks later,

the same test was re-administered to the same subjects. The results were correlated using Pearson's formula and the score was 0.81 which indicated a good reliability. Appendix (2).

Treatment

The researchers with the support of the math teacher they planned for the process to conduct the study. The researchers designed the Interactive Video Math Game Software using different computer programs such as Flash, PowerPoint, Photoshop, and Author ware program. It included different multimedia tools to support student learning such as: pictures, video clips, animation and sounds. The main objectives of the software were to improve students' basic math skills such as: counting, additions, subtraction, shapes, and ordering numbers. The researchers designed the math achievements test to evaluate students' math skills. The researchers participants were chosen by random selection and divided into two groups: the control group used traditional teaching instruction and the experimental group used interactive video games teaching instruction. The research process used the pre-test/post-test control group design. A pre test was administered to control and experimental group. Control group was taught by the traditional way of teaching math for fifth grade students for two months. Experimental group was taught using interactive video games way of teaching math for two months. students in the experimental group where directed to use the Video Math Game Software for three times a week at home or during their computer lab time. A post test was administered to control and experimental group. The data was analyzed to answer the research questions

Result

Means and standard deviations for pre-test scores for both the experimental and control groups in the achievement test are reported in Table 1. The data analysis shows the p-value was less than 0.05 (not normal groups) for that the Mann-Whitney Test and CI was used for this study using the pre-test scores as a covariate. Statistically no significant difference has been found between the mean scores of the experimental and control groups in their pre test scores ($p=0.594$) as shown in Table 1

Table (1): Means and Standard Deviations (SD) for Pre-test for Control and Experimental Group Scores.

Pre-test					
Group	N	Mean	SD	Median	P-Value
Control group	25	81.880	8.927	85.00	0.594
Experimental group	25	81.960	11.286	88.00	

Means and standard deviations for post-test scores for the experimental and control groups in the achievement test are reported in Table 2. A pre-post test control group design utilizing the analysis of covariance. A Whitney Test and CI were used for this study. The independent variable was the treatment and the dependent variable was achievement in math. A statistically significant difference has been found between the mean scores of the experimental and control groups in their post test scores ($\alpha = 0.0101$, $\alpha < 0.05$).

Table (2): Means, Standard Deviations (SD) and Whitney test for Post-test Scores for Control and Experimental Group.

Post-test					
Group	N	Mean	SD	Median	P-Value
Control group	25	89.440	10.211	94	0.010
Experimental group	25	95.240	8.283	100	

Means and standard deviations for pre-test and post-test scores for the experimental group in the achievement test are presented in Table 3. A Whitney Test and CI were used for this study. The independent variables was the treatment and the dependent variable was achievement in math. A statistically significant difference has been found between the mean scores of the pre and post test of the experimental groups ($\alpha=0.0101$, $\alpha>0.05$).

Table (3): Means, Standard Deviations (SD) and Whitney for Pre- test and Post-test Scores for Experimental Group.

Pre-post-test					
Group	N	Mean	SD	Median	P-Value
Pre-Experimental	25	81.960	11.286	88.00	0.0001
Post-Experimental	25	95.240	8.283	100	

These findings suggest that using interactive video games teaching instruction on fifth grade students' achievement in math is likely to be an effective way for teaching. The interactive video games created such a learning environment that could find equal opportunities to practice math and have feedback on their progress.

Conclusion and Discussion

The purpose of this study was to investigate the different between the effect of using traditional teaching instruction and using interactive video games teaching instruction on fifth grade students' achievement in math.

A pre-test post test design was employed in this study to collect the data. A pre-test was conducted to collect the data before applying the treatments to prove the equivalents of the control and experimental groups. The data was tested statistically. The following hypotheses were tested at 0 .05 significance level or better in this descriptive study.

The following hypotheses were tested at .05 significance levels

1. There are a significant difference at ($\alpha \leq 0.05$) in students' achievements test between the control group who used traditional teaching instruction and the experimental group who used interactive video games teaching instruction attributed to the teaching method.
2. There are statistically significant differences at ($\alpha \leq 0.05$) in students' achievements (experimental group) that used the interactive video games method.

The results of the study were:

- A statistically significant difference has been found between the mean scores of the experimental and control groups in their pre test scores ($p=.5936$),
- A statistically significant difference has been found between the mean scores of the experimental and control groups in their post test scores ($\alpha = 0.0101$, $\alpha < 0.05$),
- A statistically significant difference has been found between the

mean scores of the pre and post test of the experimental groups ($\alpha = 0.0101$, $\alpha > 0.05$).

The study showed a progress on the part of the experimental group which used interactive video games teaching instruction. It was reflected positively in the fifth grade students' achievement in math. The significant difference in the performance of the experimental group of students could be attributed to the use of interactive video game which supported students learning process by motivated them and gave them a chance to practice in the course. It emphasizes that video math games make students enjoy math on the computer and receive regular feedback. The use of video-math games as a supporting tool has been a positive addition to regular classroom math. Kebritch et al. (2010) study the effects of a video game on students' mathematics achievement. The results indicated significant improvement of the achievement of the experimental versus control group. Students who used video games reported greater motivation compared to the ones who study math in a regular way. The research finding is consistent with the finding of other studies such as Fengfeng (2008), Cengiz (2009), and Blazenka and Damir (2011).

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Appendix(1)

The interactive video games software

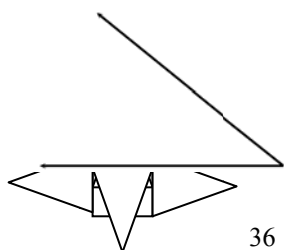
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Appendix (2)

الاختبار التحصيلي في مادة الرياضيات للصف الخامس الأساسي

يتكون هذا السؤال من (25) فقرة من فقرات الاختبار من متعدد، يلي كل فقرة 4 بدائل، واحد منها صحيح، أرسم دائرة حول رمز الإجابة الصحيحة.

- (1) الوحدة المناسبة لقياس مساحة البحر الميت هي :
 (أ) 2سم (ب) 2م (ج) 2كم (د) دونم
- (2) تحول المساحة 79300000م² إلى المتر المربع فتصبح :
 (أ) 7930 (ب) 793 (ج) 79300 (د) 793000
- (3) أرض مساحتها 3كم² اقتطعت منها البلدية 300000م²، لعمل شارع، المساحة المتبقية بالكيلومترات المربعة:
 (أ) 2700000 (ب) 1000000 (ج) 200000 (د) 27
- (4) مثلث أطوال أضلاعه 5سم، 7سم، 2سم فإن محيطه بالسنتيمتر :
 (أ) 10 (ب) 14 (ج) 12 (د) 9
- (5) أرض على شكل مستطيل طولها 40 م وعرضها 20 م ، إذا كان ثمن المتر المربع الواحد (500) فإن ثمن الأرض بالدينار:
 (أ) 400000 (ب) 800000 (ج) 200000 (د) 500000
- (6) قياس الزاوية المجاورة باستخدام المنقلة هو :
 (أ) 40 (ب) 140 (ج) 145 (د) 60
- (7) اسم المجسم الناتج من الشبكة المجاورة هو :
 (أ) هرم ثلاثي (ب) هرم رباعي (ج) منشور ثلاثي (د) مخروط
- (8) محيط مضلع سداسي منتظم طول ضلعه 2 سم يساوي :
 (أ) 4 (ب) 8 (ج) 12 (د) 36



- (9) الحد الخامس في النمط 4 ، 8 ، 16 ، 32 ، هو :
 (أ) 36 (ب) 40 (ج) 48 (د) 64
- (10) ناتج جمع الأعداد من 1 إلى 20 هو :
 (أ) 210 (ب) 201 (ج) 120 (د) 420
- (11) مربع طول ضلعة 4 سم فإن النسبة بين محيطه ومساحته تساوي
 (أ) 16 (ب) 41 (ج) 1 (د) 64
- (12) مكث تاجر (120) يوماً في بلد ما لشراء بضاعة، إن المدة التي مكثها التاجر بالشهور تساوي
 (أ) 4 (ب) 8 (ج) 12 (د) 6
- (13) أصلح عامل صيانة ثلاجة في (15) دقيقة ، إن الزمن الذي استغرقه العامل بالتواني يساوي :
 (أ) 90 (ب) 60 (ج) 900 (د) 600
- (14) لتحويل المساحة 9000000 م² إلى وحدة الكيلو متر المربع تصبح:
 (أ) 90 (ب) 9 (ج) 900 (د) 9000
- (15) بدأت صلاة التراويح الساعة التاسعة وخمسة وثلاثون ليلاً وانتهت الساعة العاشرة وعشرون دقيقة ، إن الزمن الذي استغرقته صلاة التراويح بالدقائق هو:
 (أ) 60 (ب) 30 (ج) 45 (د) 90
- (16) يمثل الشكل الذي يوجد عليه النجمة في العلم الأردني :
 (أ) المربع (ب) المستطيل (ج) الدائرة (د) المثلث
- (17) تسمى الأداة والتي هي عبارة عن قوس مكون من تدريجين أحدهما يبدأ من اليمين إلى اليسار الآخر وبالعكس اسم :
 (أ) المسطرة (ب) الفرجار (ج) المنقلة (د) المثلث القائم
- (18) العدد الناقص في النمط التالي 10 ، 12 ، 15 ، 19 ، هو:
 (أ) 24 (ب) 201 (ج) 23 (د) 25
- (19) تسمى نقطة انطلاق أي شعاعين اسم:
 (أ) ضلع الزاوية (ب) رأس الزاوية (ج) رأس الشعاع (د) نقطة المركز
- (20) كل قطعة واصلة بين أي نقطتين على الدائرة تسمى:
 (أ) وتر (ب) نصف قطر (ج) قطراً (د) مركزاً
- (21) يطلق على المسافة الثابتة الواصلة بين مركز الدائرة ونقطة عليها اسم:
 (أ) القطر (ب) الوتر (ج) المركز (د) نصف القطر

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(22) الشكل الذي يمثل شكل خلية النحل هو:

(أ) مضلع خماسي (ب) مضلع سداسي (ج) دائرة (د) معين

(23) أقام خالد وعائلته في العقبة (21) يوماً ، إن الزمن الذي مكثه خالد وعائلته بالساعات يساوي:

(أ) 210 (ب) 300 (ج) 405 (د) 504

(24) العبارة الخطأ من بين العبارات التالية فيما يتعلق بالدائرة:

(أ) كل قطر هو وتر (ب) كل وتر هو قطر

(ج) نصف قطر يشكلان معا زاوية مستقيمة (د) المسافة بين مركز الدائرة وأي نقطة عليها ثابتة

(25) اشترى خليل ورق جدران مساحته (2 متر مربع) وقد استعمل منه (13000 سنتمتر مربع)، إن كمية ورق

الجدران التي لم يستعملها خليل بالأمطار المربعة تساوي:

(أ) 2 (ب) 0,7 (ج) 70 (د) 1,3

انتهت الأسئلة