

**GRADE 12 ESSENTIAL  
SUPER QUIZ**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

This '**superquiz**' is a supplemental assessment to elevate your marks. It is worth 500 marks, the equivalent of five assignments or two quizzes. It could possibly raise your course average by as much as 10% to 15%. It will replace several zeros or low marks in your progress report

**Show work** for best mark. Single number responses will receive **no mark!**

It is **due no later than 09:20** on Monday! **No exceptions.**

Round answers to nearest 0.01 where appropriate.

Work with a friend, open book, use Study Notes.

Each individual question is worth 2 marks except where otherwise indicated

1. Calculate the 10% trimmed mean (10% from each end) for the values: 45, 96, 8, 54, 48, 30, 49, 52, 38, 44.

2. Kevin had four tests and a final exam. All the tests had the same 'weight'. The final exam was worth twice as much as a single test. If his marks were as follows: **Test 1: 67%**, Test 2: 87%; **Test 3: 90%**; Test 4: 35%; and his **final exam** was a **92%**; what was his final course average?

3. Colleen has been jogging every day! She wants to jog at least an average of 4 km per day. The last six days she has jogged 22.2 km; how far will she need to jog today to get an average of at least 4 km / day for the week?

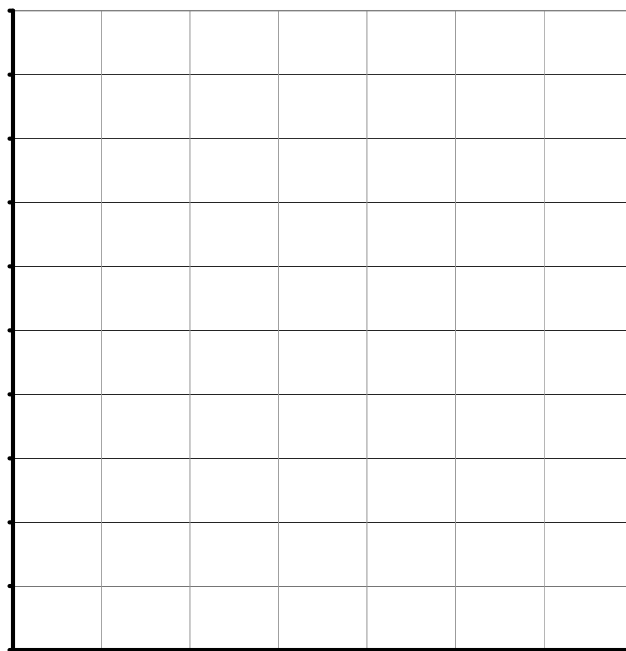
6. Baby Reeve visits his doctor for his 3-month check up. He weighs 14 pounds 8 ounces. When his weight is compared with 800 other 3-month old babies, Reeve weighs more than 321 of the babies and the same as 16 of the babies. What is his percentile rank for the weight of 3-month old babies?

(Remember! show all work, single answer responses get no mark!)

5. A quality assurance supervisor from the Canadian Nuts and Bolts company measured the masses of 300 bolts to see how consistently they were being manufactured. Here are the results of his quality testing sample.

Mass(g)	7.40	7.50	7.60	7.70	7.80	7.90	8.00
Frequency	3	5	38	86	91	60	17

- Determine the mean mass of the bolts. (You may want to do your own frequency data table)
- Calculate the median mass.
- do a properly labelled histogram and clearly mark the mean, median, mode, the  $P_{50}$  ( $Q_2$ ), the  $Q_3$ , and the approximate  $P_{80}$ .



- What is the range of the masses?
- what is the range of the inner quartile sizes, from  $Q_1$  ( $P_{25}$ ) to  $Q_3$  ( $P_{75}$ ). Does this suggest that the masses tend to be clumped more in the centre?.

(Remember! show all work, single answer responses get no mark!)

6. Anthony decides to buy a new Honda Accord. He pays the base price of \$24,700 and chooses an option package for \$2,800. He also adds an automatic transmission for an extra \$800. Anthony receives a trade-in allowance of \$4,500 for his old car. He gives a down payment of \$2000 and takes a 5% loan for 4 years on the balance (remainder). The car depreciates in value (total original price) at 20% per year from the year prior. Calculate the following:

- a. TOTAL PRICE =
- b. LESS TRADE IN =
- c. PLUS TAXES (5% GST & 8% PST) =
- d. PURCHASE PRICE =
- e. AMOUNT of LOAN =
- f. MONTHLY PAYMENT =
- f. TOTAL \$ PAID FOR CAR AFTER 4 years=
- g. VALUE OF THE CAR after 4 years=

7. **Problem Solving.** Two hot dogs and a coke cost \$4.00. A coke is 50 cents less than a hot dog. How much is a coke?

(Remember! show all work, single answer responses get no mark!)

8. The odometer of a mid-size car reads 34 719 at the beginning of a trip and 34 853 at the end of the trip. The car consumes 12.4L of gasoline during the trip.

- a. Determine the fuel economy of the sedan.
- b. If the cost of gasoline is \$1.149 per litre, find the cost of driving 100 km.

9. A subway train left downtown with 121 passengers aboard. At the first stop, 1 person got off. At the second stop, 3 people got off. At the third stop, 5 people got off. At the fourth stop, 7 people got off. If this pattern continues:

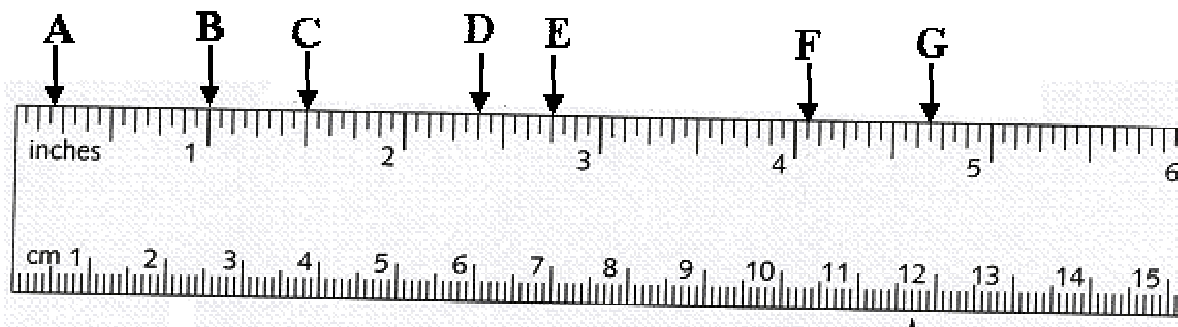
- A. How many people will get off at the 7th stop?
- B. How many stops will the train have made when all the passengers are off?

10. A cottage has an estimated market value of **\$100,000**. The portion assessment percentage for such recreational property is **40%**.

- a. what is the **portion assessed** value for property tax purposes?
- b. if the municipal mill rate at is **42 mills**, how much property tax does the owner pay?

(Remember! show all work, single answer responses get no mark!)

11. **Reading an Imperial Ruler (inches).** State the measurement a each indicated arrow (1 mark each)



Letter	A	B	C	D	E	F	G
Measure [in]							

12. A certain game involves rolling a single die. It costs \$2 each play (to roll the die). If it comes up **five or more** you win \$8.

- What is the expected value of this game?
- How much can you expect to win or lose if you play the game 30 times?

13. Samantha has five objects, weighing 1 kg, 2 kg, 3 kg, 4 kg, and 5 kg. If she weighs them two at a time, how many different weights can she get?

(Remember! show all work, single answer responses get no mark!)

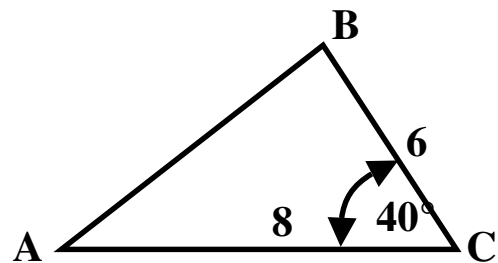
14. What is the probability of choosing a red marble from a jar containing 5 red, 6 green and 4 blue marbles?

15. What is the probability of choosing a marble that is **not** green in the above problem?

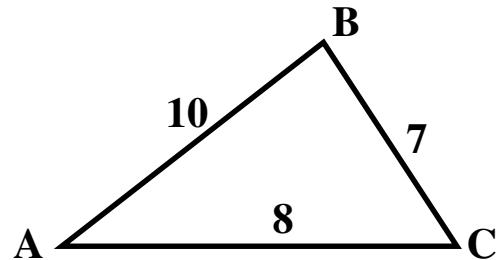
16. What is the odds in favour of selecting a red marble in the question above?

17. What is the probability of getting an even number when rolling a single 6-sided die?

18. Find the measure of side c.



19. Find the measure of Angle A



(Remember! show all work, single answer responses get no mark!)

**MONTHLY LOAN REPAYMENT TABLE FOR EACH \$1,000 BORROWED**

<b>Annual Rate</b>	<b>1 Year Monthl y</b>	<b>2 Years Monthl y</b>	<b>3 Years Monthl y</b>	<b>4 Years Monthl y</b>	<b>5 Years Monthl y</b>	<b>10 Years Monthly</b>	<b>15 Years Monthly</b>	<b>20 Years Monthly</b>	<b>25 Years Monthly</b>
<b>2%</b>	\$84.24	\$42.54	\$28.64	\$21.70	\$17.53	\$9.20	\$6.44	\$5.06	\$4.24
<b>3%</b>	\$84.69	\$42.98	\$29.08	\$22.13	\$17.97	\$9.66	\$6.91	\$5.55	\$4.74
<b>4%</b>	\$85.15	\$43.42	\$29.52	\$22.58	\$18.42	\$10.12	\$7.40	\$6.06	\$5.28
<b>5%</b>	\$85.61	\$43.87	\$29.97	\$23.03	\$18.87	\$10.61	\$7.91	\$6.60	\$5.85
<b>6%</b>	\$86.07	\$44.32	\$30.42	\$23.49	\$19.33	\$11.10	\$8.44	\$7.16	\$6.44
<b>7%</b>	\$86.53	\$44.77	\$30.88	\$23.95	\$19.80	\$11.61	\$8.99	\$7.75	\$7.07
<b>8%</b>	\$86.99	\$45.23	\$31.34	\$24.41	\$20.28	\$12.13	\$9.56	\$8.36	\$7.72
<b>9%</b>	\$87.45	\$45.68	\$31.80	\$24.89	\$20.76	\$12.67	\$10.14	\$9.00	\$8.39
<b>10%</b>	\$87.92	\$46.14	\$32.27	\$25.36	\$21.25	\$13.22	\$10.75	\$9.65	\$9.09
<b>12%</b>	\$88.85	\$47.07	\$33.21	\$26.33	\$22.24	\$14.35	\$12.00	\$11.01	\$10.53
<b>14%</b>	\$89.79	\$48.01	\$34.18	\$27.33	\$23.27	\$15.53	\$13.32	\$12.44	\$12.04
<b>16%</b>	\$90.73	\$48.96	\$35.16	\$28.34	\$24.32	\$16.75	\$14.69	\$13.91	\$13.59
<b>18%</b>	\$91.68	\$49.92	\$36.15	\$29.37	\$25.39	\$18.02	\$16.10	\$15.43	\$15.17
<b>20%</b>	\$92.63	\$50.90	\$37.16	\$30.43	\$26.49	\$19.33	\$17.56	\$16.99	\$16.78
<b>25%</b>	\$95.04	\$53.37	\$39.76	\$33.16	\$29.35	\$22.75	\$21.36	\$20.98	\$20.88
<b>30%</b>	\$97.49	\$55.91	\$42.45	\$36.01	\$32.35	\$26.36	\$25.30	\$25.07	\$25.02
<b>35%</b>	\$99.96	\$58.52	\$45.24	\$38.97	\$35.49	\$30.12	\$29.33	\$29.20	\$29.17

(Remember! show all work, single answer responses get no mark!)