SOLUTIONS ③ 11   ⑱ 9x+20 | 1 a   7 d   12 a   21 H
⑯ 475|250°   ⑲ 7 | 2 b   8 d   13 d   22 d
⑰ 771.43   ⑳ 150 | 4 b   9 b   14 d   23 H
                          | 5 c   10 D   15 b   24 d
                          | 6 b   11 F

MPM1D EQAO / Final Exam Review Day 2 – Exponent Rules and Polynomials

1 The expression below can be simplified.

$$\frac{(x^2y)^3}{(xy)^2}$$

Which of the following shows the expression in its simplest form?

a x^4y

b x^4

c xy

d x^3y

$$\frac{x^6 y^3}{x^2 y^2} = x^4 y^1$$

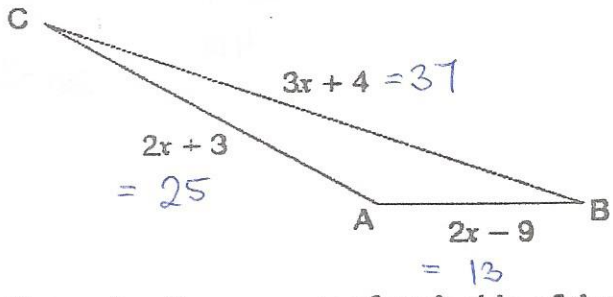**2** Which of the following represents the expression $2(3x + 4) + 3(x - 1)$ in a simplified form?

a $9x + 3$

b $9x + 5$

c $8x + 8$

d $8x + 11$

$6x + 8 + 3x - 3$

$= 9x + 5$

What Side?

The perimeter of the triangle below is 75 m.

C

$3x + 4 = 37$

$2x + 3$

$= 25$

A $2x - 9$ B

$= 13$

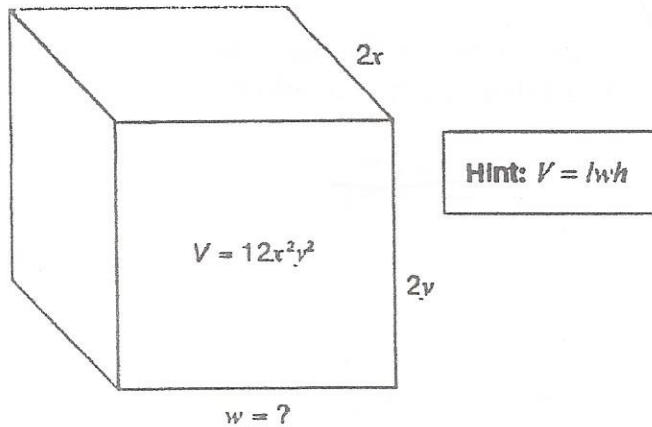Determine the measure of each side of the triangle.

Show your work.

$$75 = (2x+3) + (3x+4) + (2x-9)$$

$$75 = 7x - 2$$

$$77 = 7x$$

$$\boxed{x = 11}$$

A box with a volume of $12x^2y^2$ is shown below.

Hint: $V = lwh$

$V = 12x^2y^2$

2x

2y

w = ?

What is the width of the box?

a $\quad 2xy$

(b) $\quad 3xy$

c $\quad 4x^3y^3$

d $\quad 8x^3y^3$

$12x^2y^2 = (2x)(2y)(\quad)$

8

What is the value of $(x^2)^3$ when $x = \frac{1}{2}$?

a $\quad \frac{1}{4}$

b $\quad \frac{1}{12}$

c $\quad \frac{1}{32}$

(d) $\quad \frac{1}{64}$

$\left(\frac{1}{2}\right)^6$

7 Which of the following is equivalent to the expression below?

$$(4x - 5) + (2x + 1)$$

a $\quad 2x - 6$

b $\quad 2x - 4$

c $\quad 6x - 6$

(d) $\quad 6x - 4$

$6x - 4$

9 The area of the rectangle shown below is $6xy^2$ square units.

3x

l = ?
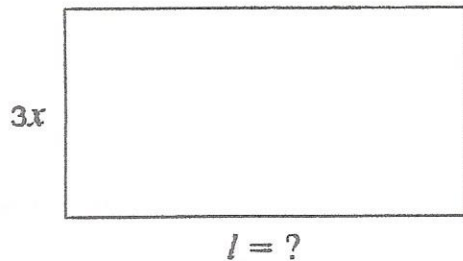
Hint: $A = lw$

If the width is 3x units, which expression represents the length of the rectangle?

a $\quad 2xy^2$ units

(b) $\quad 2y^2$ units

c $\quad 3xy^2$ units

d $\quad 3y^2$ units

$(3x)(\quad) = (6xy^2)$

14. Josie works in a sports store. She receives 8% of the total sales each day. One day, she receives $35 for her portion of the total sales. What are the total sales for that day?

a $37.80

b $43.75

c $280.00

d $437.50 *(circled)*

$$8\% - \$35$$
$$100\% = X$$

$$\frac{X}{100} = \frac{35}{8}$$

$$X = \frac{35}{8}100$$

$$= 437.50$$

15. Alfredo and his wife, Jody, work in a restaurant.

Last week Alfredo received an average of $15 in tips for each of the 55 tables he served. Jody received an average of $20 in tips for each of the 60 tables she served.

They are planning a weekend trip. Alfredo will pay a total of $220 for their hotel room and Jody will pay a total of $160 for their rental car.

How much of their combined tips will be left over after they have paid for their hotel room and rental car?

a $1620

b $1645 *(circled)*

c $2025

d $2405

$$15 \times 55 = 825$$
$$20 \times 60 = 1200$$
$$\overline{\qquad 2025}$$

$$2025 - 380 = 1645$$

16. Keepin' Tabs

A student council collects aluminum pop tabs to raise money to purchase a wheelchair. A company buys the pop tabs for $0.88 per kilogram.

If 1267 pop tabs have a mass of one pound, how many pop tabs are needed to purchase a wheelchair worth $1500?

Show your work.

kg needed:
$$1500 \div 0.88 = 1704.55$$

lb needed:
$$1704.55 \times 2.2 = 3750\,lb$$

Hint:
1 kilogram = 2.2 pounds

# of pop tabs:
$$3750 \times 1267 = 4\ 751\ 250$$

CD Sell-Off

Juan belongs to a CD club that sells CDs for $11.44 each before tax. His first shipment of CDs costs $90.49 including 13% tax.

How many CDs are in his first shipment?

Show your work.

$$90.49 - 113\%$$
$$x - 100\%$$

$$\frac{x}{100} = \frac{90.49}{113}$$

$$x = 80.08$$

total Cost before tax:
$ 80.08

\# of CDs

$80.08 \div 11.44$
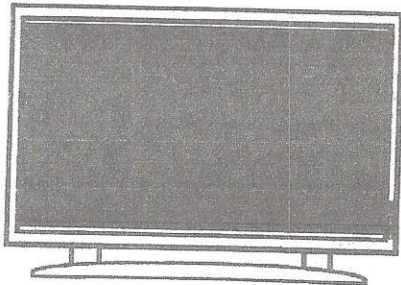
$= 6.99$

$\doteq 7$

He had 7 CDs in the shipment.

Competing Sales

Sam is interested in buying a TV. At Fair Deal, the TV is regularly priced at $599.99 and is on sale for 20% off the regular price. At Big Big Discount, the same TV is regularly priced at $899.99 and is on sale for 30% off the regular price.

What is the difference in the sale price of the TV between these two stores?

Show your work.

$ 599.99

20% off = 80%

$(599.99 \times 0.8=)$ $ 479.99

$ 899.99

30% off = 70%

$ 629.99

The difference in the sale price is : $629.99 - 479.99 = \$150$